Administrator's Guide

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Polycom® RealPresence® Group Series

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About This Guide

The *Administrator's Guide for the Polycom RealPresence Group Series* is for administrators who need to configure, customize, manage, and troubleshoot Polycom® RealPresence® Group systems. The guide covers the RealPresence Group 300, RealPresence Group 500, RealPresence Group 550, and RealPresence Group 700 systems.

Please read the Polycom RealPresence Group system documentation before you install or operate the system. The following related documents for RealPresence Group systems are available from support.polycom.com/PolycomService/support/cn/support/video/group_series/:

- *Installing Software and Options for the Polycom RealPresence Group Series and Accessories*, which describes how to install Polycom RealPresence Group systems and accessories
- *User's Guide for the Polycom RealPresence Group Series* and *User's Guide for the Polycom RealPresence Group Series and the Polycom Touch Control*, which describe how to perform video conferencing tasks
- Setup Sheets for your hardware
- Release Notes
- *Integrator's Reference Manual for the Polycom RealPresence Group Series*, which provides cable information and API command descriptions
- *Regulatory Information*, which describes safety and legal considerations for using Polycom RealPresence Group systems

For support or service, please contact your Polycom distributor or go to Polycom Support at support.polycom.com.

Polycom recommends that you record the serial number and option key of your Polycom RealPresence Group system here for future reference. The serial number for the system is printed on the unit.

System Serial Number: _____

Option Key: _____

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1

Introducing the Polycom® RealPresence® Group Systems

Your RealPresence® Group system is a state-of-the-art visual collaboration tool. With crisp, clean video and crystal-clear sound, Polycom RealPresence Group systems provide natural video conferencing interaction through the most advanced video communications technology.

Polycom RealPresence Group Systems

For technical specifications and detailed descriptions of features available for RealPresence Group systems, please refer to the product literature available at www.polycom.com.

Polycom RealPresence Group 300 Systems

For smaller meeting rooms, huddle rooms, and offices, the RealPresence Group 300 system delivers high-quality and easy-to-use video collaboration at an affordable price. Single-cable connections to the camera and display simplify setup, and sharing content is easy with the Polycom People+Content™ IP application. Its sleek design is easily hidden away, or can be taken outside the room or building for mobile applications.

Polycom RealPresence Group 500 Systems

For conference rooms and other meeting environments, the RealPresence Group 500 system delivers powerful video collaboration performance in a sleek design that is easy to configure and use. Support for dual monitors and multiple options for sharing content make it an ideal fit for most standard-sized meeting rooms. Single-cable connections for video and audio simplify setup, while the small, sleek design enables discreet placement of the device. Plus, the small design makes it ideal for mobile applications, whether moved to different locations within a building, or used as part of a mobile video kit.

Polycom RealPresence Group 550 Systems

For conference rooms and other meeting environments, the RealPresence Group 550 system delivers powerful video collaboration performance in a compact design that is easy to install, configure, and use. Triple-monitor support makes it an ideal fit for rooms with high requirements on both local, remote, and content video outputs. With its rich integrator-class connectors, it can satisfy various integration environments.

Polycom RealPresence Group 700 Systems

For boardrooms, lecture halls, and other environments where only the best will do, the RealPresence Group 700 system offers extreme video collaboration performance and flexibility. Powerful video processing and flexible input and output options make it ideal for rooms with complex requirements, such as multiple displays, cameras, and content sources. The intuitive interface that comes standard on all RealPresence Group products makes it easy for even novice users to control the system and get the most out of their video collaboration experience with no hassles.

Setting Up Your System Hardware

This manual provides information to supplement the setup sheets provided with your system and its optional components. A printed copy of the system setup sheet is provided with each RealPresence Group system. PDF versions of the system setup sheets are available at support.polycom.com.

Recharging the Remote Control Battery

Your system setup sheet shows how to charge the battery in the remote control the first time. When the remote control battery power is at 10% or less, a notification is displayed on the home screen. Although other notifications override the low battery notification, the low battery notification returns after the other notifications are dismissed. The low battery notification is not displayed while the system is in a call.

The following steps describe how to recharge the battery.

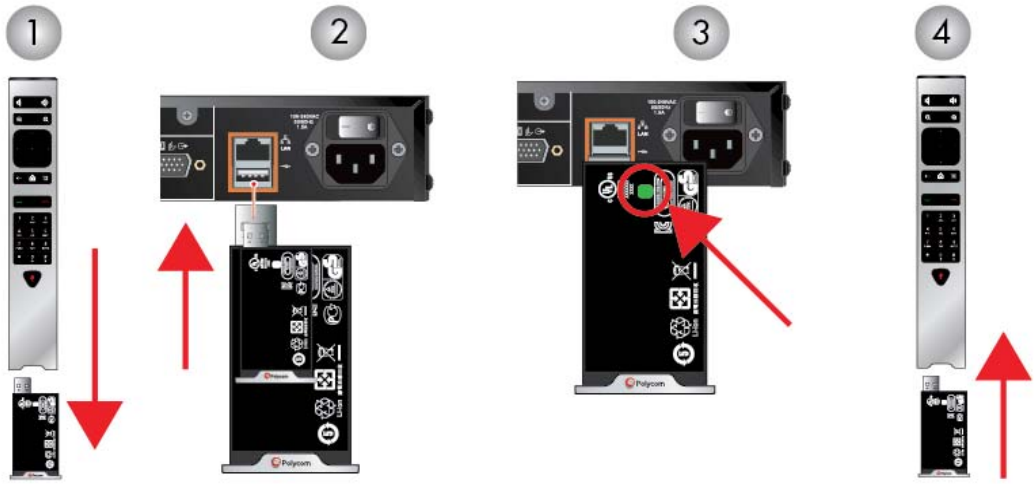
To recharge the remote control battery:

1. Pull the battery out of the end of the remote control.
2. Insert the USB plug into a USB 2.0 port, such as the one on your system. The RealPresence Group 300 and RealPresence Group 500 systems have two USB 2.0 ports on the back of the system, while the RealPresence Group 700 has one port on the front of the system.

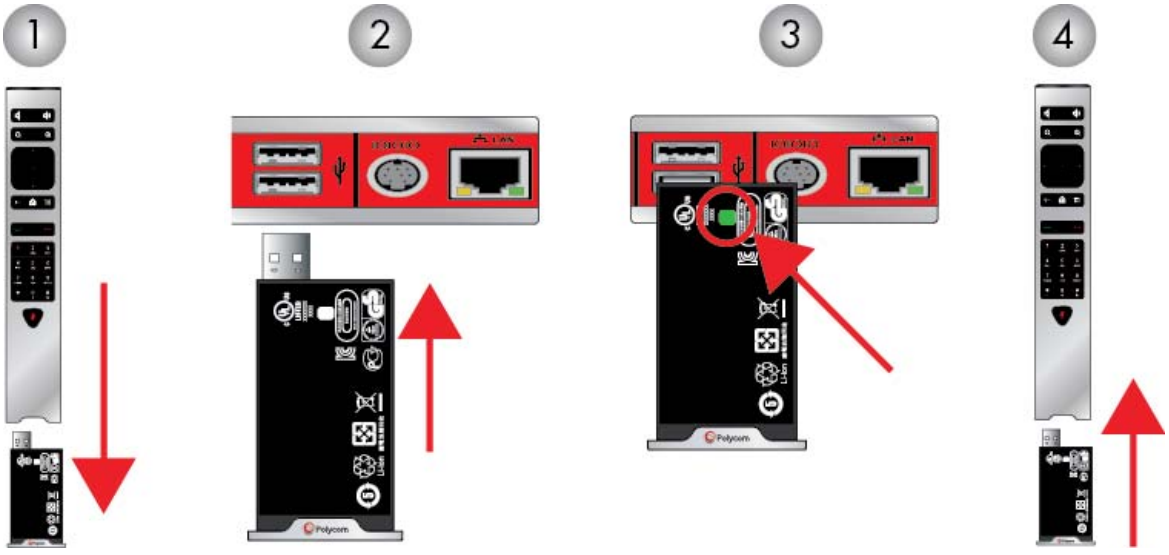
The RealPresence Group 550 systems have two USB 2.0 ports, on the front and back of the system respectively. However, you can charge the system only with the USB port on the back panel.

3. Wait until the status light on the battery turns green before removing it from the port.
4. Insert the charged battery into the remote control.

The following figure illustrates these steps for the RealPresence Group 550 systems.



The following figure illustrates these steps for the RealPresence Group 300, RealPresence Group 500, and RealPresence Group 700 systems.



If you have a RealPresence Group 700 system, you can also recharge the battery using the USB port on the front of the system.

Positioning the System

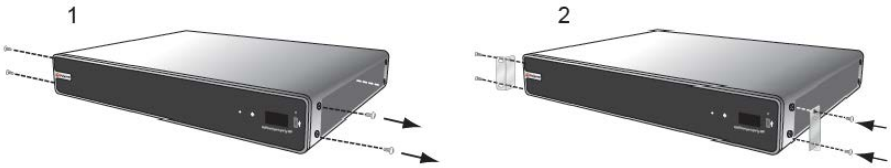
Polycom RealPresence Group products are versatile enough to accommodate being set up in a variety of ways. This section describes placement for your RealPresence Group system, Touch Control, EagleEye™ Acoustic camera, and EagleEye Director automatic camera positioning system.

Positioning Polycom RealPresence Group Systems

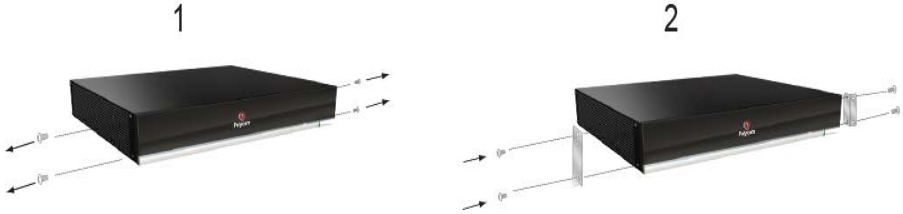
RealPresence Group systems are designed to be placed on a tabletop or in an equipment rack.

To position the system:

1. Do one of the following:
   - If you plan to place the system on a table or shelf, attach the self-adhesive feet to the bottom of the system.
   - If you plan to mount a RealPresence Group 700 system in an equipment rack, install the mounting brackets, as shown in the following figure.



   - If you plan to mount a RealPresence Group 550 system in an equipment rack, install the mounting brackets, as shown in the following figure.



Polycom RealPresence Group 300 and RealPresence Group 500 systems use a different type of mounting bracket. For more information, refer to support.polycom.com or contact your Polycom distributor.

2 Place the system in the desired location. Position the system so that the camera does not face toward a window or other source of bright light. Leave enough space to connect the cables easily. Place the camera and display together so that people at your site face the camera when they are looking at the display.

Positioning the Polycom Touch Control Device

Polycom RealPresence Group systems can be controlled by the Polycom Touch Control.

Ensure that the Touch Control is conveniently located for use during a meeting.

When the Polycom Touch Control is not paired with a RealPresence Group system, the device can be used as a virtual remote control. To use the Polycom Touch Control as a virtual remote control, ensure that the infrared (IR) transmitter on the front of the device is facing the RealPresence Group system you want to control.

Positioning the EagleEye™ Acoustic Camera

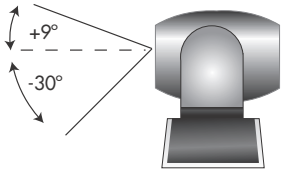
The Polycom EagleEye™ Acoustic camera is designed to be placed on top of your monitor, as shown in the following diagram.

Positioning the Polycom EagleEye Director

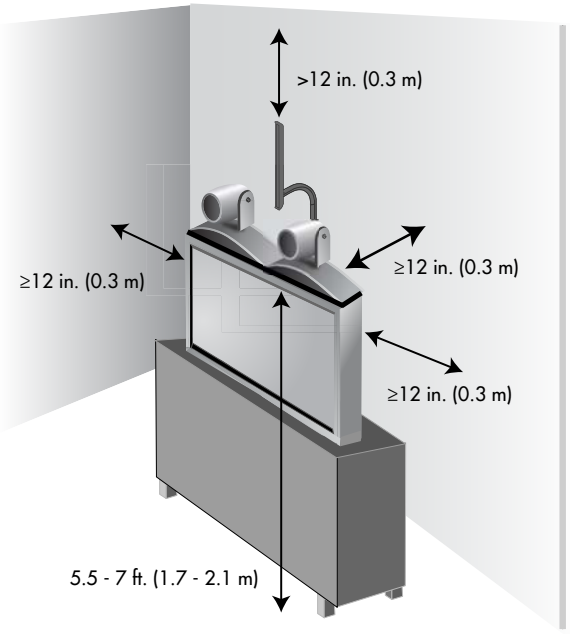
The Polycom EagleEye Director is an automatic HD tracking system that works with RealPresence Group systems. Refer to Polycom EagleEye Director on page 57 for more information about the automatic camera positioning system.

Follow these guidelines when you use the EagleEye Director with your RealPresence Group system:

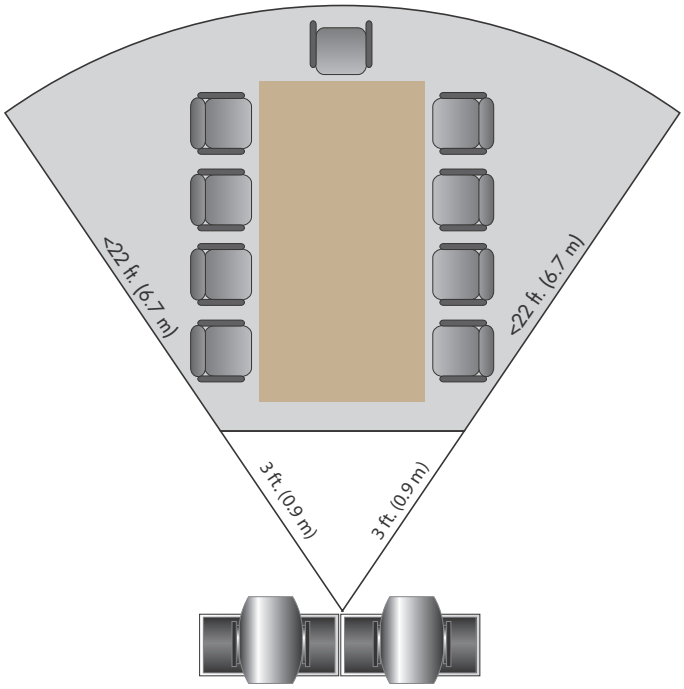
- Avoid setting the Polycom EagleEye Director in the corner of a room. The EagleEye Director should be at least 12 inches away from all of the walls.
- Make sure the EagleEye Director is on a level surface or mounting bracket.
- The camera's viewing angle is approximately 9 degrees above and 30 degrees below its direct line of sight.



- To ensure the best view from the Polycom EagleEye Director voice-tracking feature, follow these suggestions:
  - Set the EagleEye Director on top of a monitor. Ideally, place the camera between 5.5 and 7 feet from the ground.



– Ensure that people are sitting within the viewing range of between 3 and 22 feet from the device.



Powering On and Off

Connect power and power on the RealPresence Group system after you have connected all of the equipment that you will use with it. Make sure that the system is powered off before you connect devices to it. It is important to note that Polycom RealPresence Group 300, 500, and 700 systems do not have what you might think of as a power *button*—they have a power *proximity sensor*. Instead of pressing an actual button that moves, you touch the sensor (or near the sensor) that indicates power on the front of the system.

For instructions on how to power on and off the Polycom Touch Control, refer to Powering On the Polycom Touch Control on page 11.

Power-On Self Test (POST)

After being powered on, the RealPresence Group systems automatically perform system health checks before the system is initialized. This process is known as a power-on self test, or POST. The status of the POST sequence is displayed with the LED indicator light on the front of the device, or in the case of the RealPresence Group 700 system, in the text field display on the front of

the device. All test results are logged in the system's memory. For more information about what the colors of the indicator lights mean, refer to Polycom RealPresence Group System Indicator Light on page 9.

When the POST sequence completes with no severe errors, the RealPresence Group system starts normally. If any warnings occur during POST, you can view them after the system starts by going to **Settings > System Information > Status > Active Alerts** in the local interface or **Diagnostics > System > Active Alerts** in the web interface. If a severe error occurs during startup, the system will not start up. Contact Polycom technical support.

Powering On and Off Polycom RealPresence Group Systems

To power on the RealPresence Group system, do one of the following:

- Press any button on the remote control or pick up the remote control to wake up the system if it is asleep.
- For RealPresence Group 300, 500, and 700 systems, press on the remote control.
- For RealPresence Group 300, 500, and 700 systems, touch the power sensor on the front of the system.
- For the RealPresence Group 550 system, switch on the power.

  The power switch is located on the back of your system.

The Polycom screen is displayed within about 10 seconds.

To shut down the RealPresence Group system, do one of the following:

>> For the RealPresence Group 550 system, switch off the power.

The power switch is located on the back of your system.

- For RealPresence Group 300, 500, and 700 systems, press and hold on the remote control.

  Refer to Configuring Remote Control Behavior on page 153 for more information about programming .
- For RealPresence Group 300, 500, and 700 systems, touch and hold the power sensor on the front of the system. The indicator light changes color and blinks, indicating that the system is shutting down. Release the power sensor when the indicator light changes color.

Powering On and Off Polycom RealPresence Group 700 Systems

The RealPresence Group 700 system supports a low-power standard that limits the power supplied to the camera when the system is powered off. So, if the EagleEye III camera is receiving its power only from the HDCI connector attached to the system, it will not have an active IR receiver capable of powering on the system using the handheld remote when in the `Power Off` state.

If the camera IR is the only exposed IR and you normally power the system on and off with the handheld remote control, use one of these solutions:

- Provide direct power to the Eagle Eye III camera with the optional EagleEye camera power supply, 1465-52748-040. This allows the IR sensor to remain in a `Power On` state, so that the camera is capable of receiving IR commands from the remote control.
- Position the RealPresence Group system so that the IR receiver on the front of the system has a line-of-sight to the remote control.
- Use a third-party IR extender to extend the IR signal from the room to the IR receiver on the front of the RealPresence Group system.

Sleep and Wake States

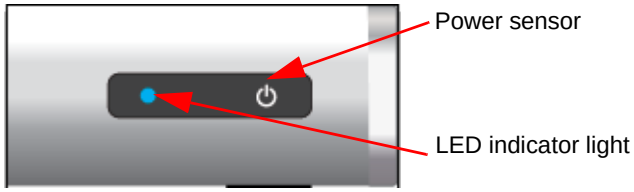
The RealPresence Group 700 system supports `Sleep` and `Wake` states in which the system provides power to the EagleEye III camera. This allows the EagleEye III camera to wake from a `Sleep` state through a signal received by the camera's IR sensor. The camera does not require any additional power supply or IR extender.

Power Button on the Remote Control

You can use the remote control to power on and off the RealPresence Group 300, 500, and 700 system or put the RealPresence Group 300, 500, 550, and 700 system to sleep or wake it. Program this behavior using the web interface.

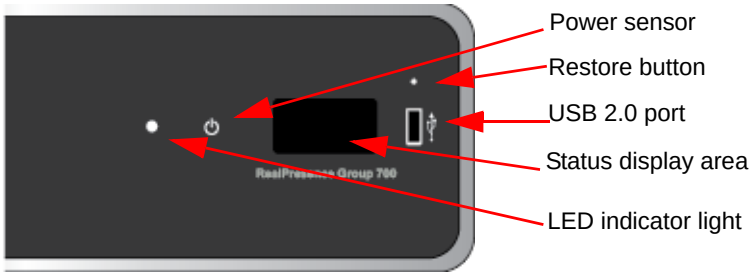
Polycom RealPresence Group System Indicator Light

The following figure shows the location of the power sensor and indicator light on the front of the Polycom RealPresence Group 300 system and RealPresence Group 500 system.



The following figure shows the location of the indicator light on the front of the Polycom RealPresence Group 550 system.

The following figure identifies the features on the front of the RealPresence Group 700 system.



Use the USB port for any USB 2.0 device.

If your RealPresence Group 700 systems operates with the Maximum Security Profile, the status display area does not display the software version or IP address.

Brief status and diagnostic messages are displayed in the status display area of the RealPresence Group 700 system. The LED on the front of all RealPresence Group systems provides the following information.

Indicator Light	System Status
Off	System is powered off.
Blinking blue light	In a POST sequence, no errors are occurring and tests are successful. The system continues to blink blue and initializes after the sequence is complete if no severe errors occur.
Blinking amber light	In a POST sequence, at least one test has resulted in a warning error. The system continues to blink amber but initializes after the sequence is complete if no severe errors occur.

Indicator Light	System Status
Blinking red light	In a POST sequence, at least one test has resulted in a severe error. The system continues to blink red and will not start up.
Steady blue light	System is initializing. System is awake.
Blinking blue light	System received an IR (infrared) signal. System is receiving a call.
Steady amber light	System is asleep.
Alternating blue and amber lights	System is in software update mode. System is in factory restore mode.
Fast blinking amber light	System is shutting down.
Steady green light	System is in a call.

Powering On the Polycom Touch Control

This section describes how you connect the Touch Control to your RealPresence Group system. You'll also learn how to power on, power off, and wake up the Touch Control. For information about setting up and using the Touch Control, refer to Setting Up the Polycom Touch Control on page 157

To power on the Polycom Touch Control:

1. Connect the Ethernet cable to the underside of the Polycom Touch Control.
2. Plug the Ethernet cable into the wall outlet.
   - If your room provides Power Over Ethernet, you can connect the Ethernet cable directly to a LAN outlet.
   - If your room does not provide Power Over Ethernet, you must connect the Ethernet cable to the optional power supply adapter. Then connect the power supply adapter to a LAN outlet and power outlet. The power supply adapter is sold separately.

   The Polycom Touch Control powers on and displays the language selection screen.

To power off the Polycom Touch Control:

1. From the Touch Control Home screen, touch **User Settings**.
2. Scroll to the Power section.
3. Select **Touch Control Power**.

4 In the menu that appears, select **Power Off the Touch Control**. If you choose to power off the Polycom Touch Control, you must disconnect and reconnect the LAN cable to power it on again.

To wake up the Polycom Touch Control:

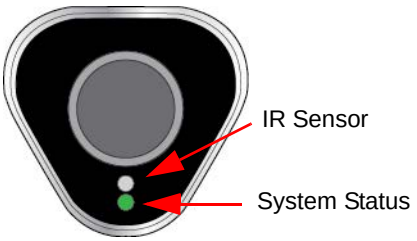
The touch control goes to sleep after 2 minutes of inactivity. Touch the screen to wake it up.

Polycom Touch Control Indicator Light

When the Polycom Touch Control is on, the **Home** button is lit.

Polycom EagleEye Acoustic Camera Indicator Lights

The following figure shows the location of the LED on the front of the EagleEye Acoustic camera.

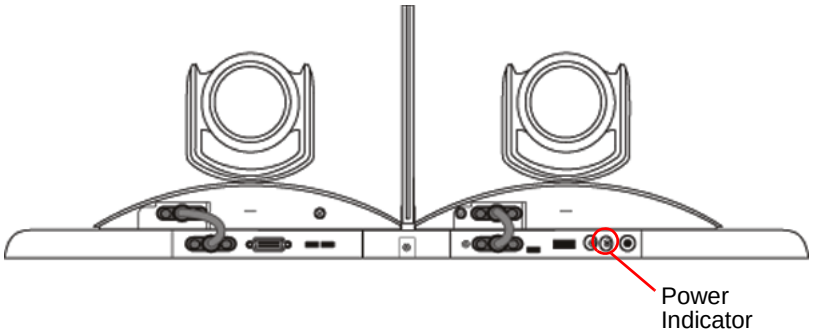


The system status light provides the following information:

Indicator Light	System Status
Steady blue light	System is on and awake.
Blinking blue light	Camera firmware is being updated.
Steady amber light	System is asleep.
Steady green light	System is in a call.

Polycom EagleEye Director Indicator Light

The following figure shows the location of the power indicator light on the back of the Polycom EagleEye Director.



This indicator light provides the following information.

Indicator Light	Status
Steady green light	Cameras are ready; camera tracking is off
Steady red light	Cameras are powering on
Blinking red light	Factory restore on the cameras is starting
Blinking blue light	Camera tracking is on

Configuring the RealPresence Group System

This section describes how you configure your RealPresence Group system by using the setup wizard that walks you through the initial steps and accessing administrative settings in the local and web interfaces.

Setup Wizard

When you power on your system for the first time, the setup wizard leads you through the minimum configuration steps required to place a call.

The setup wizard allows you to set an Admin ID and password, which allows you to limit access to the Admin Settings. The default Admin ID is *admin* and the default admin room password is the 14-digit system serial number on the **Settings > System Information > Information > System Detail** screen in the local interface or on the back of the system. Admin and User IDs are not case sensitive.

Make sure you can recall the room password if you set one. If you forget the password, you must use the restore button to run the setup wizard again in order to access the Admin Settings and reset the password.

You can run the setup wizard or view the configuration screens in either of the following two ways.

- **In the room with the system** — You can navigate the screens and enter information by using the remote control and the onscreen keyboard. When you reach a text field, press the **Select** button on the remote control to display the onscreen keyboard. Note that the onscreen is automatically displayed when you reach the **System Name** field in the setup wizard.

  Be aware that only those configuration screens needed to get the system connected are included in the local interface. Most of the administrative settings are available only in the web interface.

- **From a remote location** — If you know the IP address of the system, you can access and configure it using the web interface. For more information about using the web interface, refer to Using the Polycom RealPresence Group System Web Interface on page 139.

The setup wizard is available during initial setup, after a system reset with system settings deleted, or after using the restore button.

Admin Settings

After you run the setup wizard, you can view or change the system's configuration by going to **Settings > Administration** in the system's local interface or **Admin Settings** in the web interface. The local interface has a subset of the Administration settings that are available in the web interface.

When a RealPresence Group System is paired with a Polycom Touch Control, the following statements are true:

- You can change the system's configuration using the web interface only.
- When prompted to enter the Admin Room ID and password and no Admin Room ID is configured, you can submit a blank password.

If you enable a provisioning service, any settings provisioned by the Polycom Converged Management Application™ (CMA®) or Polycom RealPresence® Resource Manager system might be displayed as read-only settings in the Admin Settings. For more information about automatic provisioning, refer to the Polycom CMA or RealPresence Resource Manager system documentation on the Polycom web site.

The Polycom Touch Control has separate admin settings that allow you to update Touch Control software and configure LAN, regional, and security properties for the Touch Control. Refer to the following sections for more information:

- Configuring the Polycom Touch Control LAN Properties on page 29
- Configuring Polycom Touch Control Regional Settings on page 167
- Configuring Admin ID and Password for the Polycom Touch Control on page 114
- Managing Polycom Touch Control Logs on page 136

An admin ID and password might be configured for the Touch Control Administration settings. The default ID is *admin* and the default password is *456*.

If your RealPresence Group system will be provisioned by the RealPresence Resource Manager system and you plan to use PKI certificates, make sure you configure the **Host Name** setting on the web interface in **Admin Settings > Network > LAN Properties > LAN Options** with the same name as the name that the RealPresence Resource Manager system will provision so that certificate signing requests (CSRs) generated during certificate installation have the correct host name information in them. For more information about PKI certificates, refer to Managing Certificates and Revocation on page 124. For more information about provisioning, refer to Using a Provisioning Service on page 148.

RealPresence Group System Software Options

Some of the features of a RealPresence Group system are optional. To activate the following features, you must purchase and install a key code:

- Multipoint Video Conferencing: This option enables your system to make video calls to more than one site at a time.It is available only for RealPresence Group 500 and RealPresence Group 700 systems. For more information, refer to Configuring Multipoint Calling on page 93.
- Telepresence Interoperability Protocol (TIP): This option improves the interoperability of systems in environments with certain Cisco telepresence systems. For more information, refer to Configure SIP Settings for Integration with the Telepresence Interoperability Protocol (TIP) on page 38.
- Real-Time Video (RTV): This option enhances the video experience by enabling the use of the Microsoft RTV video codec, which provides higher resolutions during video calls when integrated with Microsoft Lync Server. For more information about integrating with Microsoft Lync Server, refer to the *Polycom Unified Communications Deployment Guide for Microsoft Environments*.

- Advanced Video 1080p - This option makes 1080p video available to RealPresence Group systems.

Customizing the Home Screen

Home screen customizations have no effect when the RealPresence Group system is paired with a Polycom Touch Control.

Use the Polycom RealPresence Group system web interface to configure how information is displayed on the Home screen of the local interface.

To configure the Home screen using the web interface:

1. In your web browser address line, enter the RealPresence Group system's IP address.
2. Go to **Admin Settings > General Settings > Home Screen Settings**.
3. Configure the settings on the Home Screen Settings page that are described in the following sections.

Displaying Speed Dial Entries

You use speed dialing to quickly call an IP address designated as a Favorite.

Points to note about speed dial entries:

- To place a call within your company's telephone system, enter the internal extension instead of the full number.
- Speed dial entries do not appear when the Polycom RealPresence Group system is paired with a Polycom Touch Control.

To enable speed dialing in the web interface:

1. Go to **Admin Settings > General Settings > Home Screen Settings > Speed Dial**.
2. Click the **Choose Favorites** link to create and select the favorites you want to designate as speed dial entries.
3. Select the **Enable Speed Dial** setting.

For more information about calling, adding, or removing speed dial entries, refer to Speed Dial on page 101.

Displaying a Calendar

If your RealPresence Group system is configured to connect to the Microsoft Exchange Server, you can view scheduled meetings on the Home screen. If no meetings appear on the Home screen, either the system is not connected to the Microsoft Exchange Server or no meetings are scheduled.

For more information about using the calendar, refer to the *User's Guide for the Polycom RealPresence Group Series*.

Changing the Background Image

The local interface of the RealPresence Group systems displays a default background image that's similar to a computer's "wallpaper." You cannot delete this image, but you can upload your own image to replace it.

The pixel size of the image you upload must be 1920 x 1080 and the image format must be JPEG.

To upload and use a background image:

1. In the web interface, go to **Admin Settings > General Settings > Home Screen Settings > Background**.
2. Click **Choose File** to search for and select the image you want to upload.
3. When the image name appears next to **Choose File**, click **Upload** to display the image as your background.

Configuring Home Screen Icons

Home Screen Icons are the icons that appear in the lower center of the local interface, three at a time. By default, users see the icons shown in the following table in this location.

Icon	Name
	Menu
	Content This icon appears only when a content source is detected.

Icon	Name
	Settings This icon takes you to the Setting screen, where you find System Information, Administration, and, if enabled, User Settings.
	Place a Call

Enabling Access to User Settings

User settings allow users to control some aspects of cameras and meetings, for example, allowing other people in a call to control your camera or whether to enable auto answer for point-to-point or multipoint calls.

To enable access to User settings:

1. Do one of the following:
   - In the local interface, go to **Settings > Administration > Security > Settings**.
   - In the web interface, go to **Admin Settings > Security > Global Security > Access**.
2. Enable the **Allow Access to User Settings** setting.

Restricting Access to User and Administrative Settings

You can restrict access to **User Settings** and **Administration** settings, making them available only through the web interface.

To prevent users from using User Settings or Administration Settings in the local interface:

>> In **Admin Settings > General Settings > Home Screen Settings > Home Screen Icons**, disable the **Show icons on the home screen** setting.

If the following conditions are met, the ability to show icons is automatically enabled and read only:

- Speed Dial is disabled in the **Admin Settings** > **General Settings** > **Home Screen Settings**
- The Calendar is not displayed because the system is not connected to the Microsoft Exchange Server
- Remote Access through the Web, Telnet, and SNMP is disabled **in Security** > **Global Security** > **Access**

Customizing the Place a Call Icon Navigation

You can choose where selecting takes the user.

To choose where the local interface takes users when they select Place a Call:

>> In **Admin Settings > General Settings > Home Screen Settings > Home Screen Icons**, select one of the following locations:

- Dial Pad
- Contacts
- Recent Calls

Displaying System Information on the Local Interface

The local interface of the RealPresence Group systems displays an address bar at the bottom of the home screen. In addition to displaying certain system information on the local interface's Menu, you now have the ability to display the system's IP address, extension, and SIP address in the address bar.

To display system information in the address bar:

1 In the web interface, go to **Admin Settings > General Settings > Home Screen Settings > Address Bar**.

2 Configure the following settings.

Setting	Description
Show IP address on the home screen	Displays the IP address from **Admin Settings > Network > LAN Properties > IP Address (IPv4)** on the left side of the address bar.
Show Extension on the home screen	Displays the H.323 Extension from **Admin Settings > Network > IP Network > H.323** in the center of the address bar.
Show SIP address on the home screen	Displays the SIP address from **Admin Settings > Network > IP Network > SIP** (the **Sign-in Address**) on the right side of the address bar. **Note:** The **Show SIP address** setting displays only if your system is configured with a SIP address.

Configuring Menu Settings

The menu settings in the web interface determine some of the information that is displayed in the local interface's main menu. The menu settings are pulled from the system's network settings. For more information about network settings, refer to Chapter 2, Networks, on page 23.

To configure local interface menu settings:

1. In the web interface, go to **Admin Settings > General Settings > Menu Settings**.
2. Configure these settings.

Setting	Description
Show System Information	Specifies whether to show certain system information in the local interface menu.
Display	Select whether to display the following information: • The system's **SIP Address** • The system's **IP Address** • The **Extension** associated with the system **Note:** The **SIP Address** setting displays only if your system is configured with a SIP address.
Show System Button	Specifies whether to show a **System** button in the menu. **Note:** The **System** button in the local interface's main menu is not the same as the **System** link in the blue bar at the top of the web interface page.

2

Networks

This guide covers network types used worldwide. Note that not all network types are available in all countries.

Getting the Network Ready

Before you begin configuring the network options, you must make sure your network is ready for video conferencing.

Polycom also offers contract high-definition readiness services. For more information, please contact your Polycom distributor.

Connecting to the LAN

You must connect the system to a LAN to:

- Make H.323 or SIP calls
- Use a Global Directory Server
- Register with a management system
- Access the web interface
- Use People+Content™ IP
- Connect to the Polycom Touch Control

LAN Status Lights

The LAN connector on the RealPresence Group 300, 500, and 700 systems has two lights to indicate connection status and traffic.

Indicator Light	Connection Status
Left light off	No 1000Base-T connection.
Left light green	1000Base-T connection.
Right light off	No 10/100 Base-T connection and no network traffic with 1000 Base-T connection.
Right light on	10/100 Base-T connection and blinks with network traffic.
Right light blinking	Network traffic.

The LAN connector on the RealPresence Group 550 systems has two lights to indicate connection status and traffic.

Indicator Light	Connection Status
Left light off, right light off	No 10/100/1000 Base-T connection.
Left light off, right light green	10/100/1000 Base-T connection without activity.
Left light blinking yellow, right light green	10/100/1000 Base-T connection and blinks with network traffic.

Configuring LAN Properties

You can configure LAN properties for the RealPresence Group systems and for Polycom Touch Control Devices. Refer to the following section and Configuring the Polycom Touch Control LAN Properties on page 29.

Configuring RealPresence Group System LAN Properties

To configure RealPresence Group System LAN properties:

>> Do one of the following:

- In the local interface, go to **Settings > Administration > LAN Properties**.

– In the web interface, go to **Admin Settings > Network > LAN Properties**.

Configure IP Address (IPv4) Settings

Configure the following **IP Address (IPv4)** settings on the LAN Properties screen.

Setting	Description
IP Address (in the local interface: **Set IP Address**)	Specifies how the system obtains an IP address. • **Obtain IP address automatically** — Select if the system gets an IP address from the DHCP server on the LAN. • **Enter IP address manually** — Select if the IP address will not be assigned automatically.
Your IP Address is (in the local interface: **IP Address**)	If the system obtains its IP address automatically, this area displays the IP address currently assigned to the system. If you selected **Enter IP address manually**, enter the IP address here.
Default Gateway	Displays the gateway currently assigned to the system. If the system does not automatically obtain a gateway IP address, enter one here.
Subnet Mask	Displays the subnet mask currently assigned to the system. If the system does not automatically obtain a subnet mask, enter one here.

Configure IP Address (IPv6) Settings

Configure the following **IP Address (IPv6)** settings on the LAN Properties screen.

Setting	Description
Enable IPv6	Enables the IPv6 network stack and makes the IPv6 settings available.
IP Address	Specifies how the system obtains an IP address. **Obtain IP Address Automatically**—Select if the system gets an IP address from SLAAC or a DHCP server on the LAN. **Enter IP Address Manually**—Select if the IP address will not be assigned automatically.

Setting	Description
Enable SLAAC	Specifies whether to use stateless address autoconfiguration (SLAAC) instead of DHCP to automatically obtain an IP address. Using DHCP to get the IP address means that you need a DHCP server to get the address from the network, but with SLAAC, existing routers help the system get the IP address from the network.
Link-Local	Displays the IPv6 address used for local communication within a subnet. This setting is configurable only when **Enter IP Address Manually** is selected.
Site-Local	Displays the IPv6 address used for communication within the site or organization. This setting is configurable only when **Enter IP Address Manually** is selected.
Global Address	Displays the IPv6 internet address. This setting is configurable only when **Enter IP Address Manually** is selected.
Default Gateway	Displays the gateway currently assigned to the system. If the system does not automatically obtain a gateway IP address, enter one here. This setting is configurable only when **Enter IP Address Manually** is selected.

Configure DNS Servers Settings

Configure the following **DNS Servers** settings on the LAN Properties screen.

Setting	Description
DNS Servers (in the local interface: **DNS**)	Displays the DNS servers currently assigned to the system. When the IPv4 or IPv6 address is obtained automatically, the DNS Server addresses are also obtained automatically. In the web interface, you can specify IPv4 DNS server addresses only when the IPv4 or IPv6 address is entered manually. In the local interface, the four DNS server address fields are always editable.
Server 1 Address **Server 2 Address** **Server 3 Address** **Server 4 Address** (web only)	In the web interface, if the system does not automatically obtain a DNS server address, you can enter one here. Up to four DNS server addresses are allowed. If all four address fields show addresses, you will be unable to add another.

Configure LAN Options Settings

Configure the following **LAN Options** settings on the LAN Properties screen. In the web interface, these settings are displayed within LAN Options, but in the local interface they are arranged differently.

Setting	Description
Host Name (web interface only)	Indicates the system's DNS name. On IPv4 networks the system will send the host name to the DHCP server in order to enable it to register the hostname with the local DNS server and/or look up the domain where the endpoint is registered (if supported). This function is not supported on IPv6, so you can leave this field unconfigured if you're using an IPv6 network. However, configuring the field to contain the registered host name is recommended.
Domain Name (web interface only)	Displays the domain name currently assigned to the system. If the system does not automatically obtain a domain name, enter one here.
Autonegotiation (under **General Settings** in local interface)	Specifies whether the system should automatically negotiate the LAN speed and duplex mode per IEEE 802.3 autonegotiation procedures. If this setting is enabled, the **LAN Speed** and **Duplex Mode** settings become read only. Polycom recommends that you use autonegotiation to avoid network issues.
LAN Speed (under **General Settings** in local interface)	Specifies whether to use **10 Mbps**, **100 Mbps**, or **1000 Mbps** for the LAN speed. Note that the speed you choose must be supported by the switch.
Duplex Mode (under **General Settings** in local interface)	Specifies the duplex mode to use. Note that the Duplex mode you choose must be supported by the switch.
Ignore Redirect Messages (web interface only)	Enables the RealPresence Group system to ignore ICMP redirect messages. You should enable this setting under most circumstances.

Setting	Description
ICMP Transmission Rate Limit (millisec) (web interface only)	Specifies the minimum number of milliseconds between transmitted packets. Enter a number between 0 and 60000. The default value of 1000 signifies that the system sends 1 packet per second. If you enter 0, the transmission rate limit is disabled. This setting applies only to "error" ICMP packets. This setting has no effect on "informational" ICMP packets, such as echo requests and replies.
Generate Destination Unreachable Messages (web interface only)	Generates an ICMP `Destination Unreachable` message if a packet cannot be delivered to its destination for reasons other than network congestion.
Respond to Broadcast and Multicast Echo Requests (web interface only)	Sends an ICMP `Echo Reply` message in response to a broadcast or multicast Echo Request, which is not specifically addressed to the RealPresence Group system.
IPv6 DAD Transmit Count	Specifies the number of Duplicate Address Detection (DAD) messages to transmit before acquiring an IPv6 address. The RealPresence Group system sends DAD messages to determine whether the address it is requesting is already in use. Select whether to transmit 0, 1, 2, or 3 DAD requests for an IPv6 address.
Enable EAP/802.1X	Specifies whether EAP/802.1X network access is enabled. RealPresence Group systems support the following authentication protocols: • EAP-MD5 • EAP-PEAPv0 (MSCHAPv2) • EAP-TTLS • EAP-TLS
EAP/802.1X Identity	Specifies the system's identity used for 802.1X authentication. This setting is available only when EAP/802.1X is enabled. The field cannot be blank.
EAP/802.1X Password	Specifies the system's password used for 802.1X authentication. This setting is required when EAP-MD5, EAP-PEAPv0 or EAP-TTLS is used.
Enable 802.1p/Q	Specifies whether VLAN and link layer priorities are enabled.

Setting	Description
VLAN ID	Specifies the identification of the Virtual LAN.This setting is available only when 802.1p/Q is enabled. The value can be any number from 1 to 4094.
Video Priority	Sets the link layer priority of video traffic on the LAN. Video traffic is any RTP traffic consisting of video data and any associated RTCP traffic. This setting is available only when 802.1p/Q is enabled. The value can be any number from 0 to 7, although 6 and 7 are not recommended.
Audio Priority	Sets the priority of audio traffic on the LAN. Audio traffic is any RTP traffic consisting of audio data and any associated RTCP traffic. This setting is available only when 802.1p/Q is enabled. The value can be any number from 0 to 7, although 6 and 7 are not recommended.
Control Priority	Sets the priority of control traffic on the LAN. Control traffic is any traffic consisting of control information associated with a call: • H.323—H.225.0 Call Signaling, H.225.0 RAS, H.245, Far End Camera Control • SIP—SIP Signaling, Far End Camera Control, Binary Floor Control Protocol (BFCP) This setting is available only when 802.1p/Q is enabled. The value can be any number from 0 to 7, although 6 and 7 are not recommended.
Enable PC LAN Port	The setting appears only for RealPresence Group 700 systems. Specifies whether the PC LAN port is enabled on the back of the system. Disable this setting for increased security.

Configuring the Polycom Touch Control LAN Properties

To configure Polycom Touch Control LAN settings:

1 From the Home screen, touch **Administration.**

2 Touch the **LAN Properties** tab.

3 Configure the following **IP Address (IPv4)** settings.

Setting	Description
Set IP Address	Specifies how the Touch Control obtains an IP address. • **Obtain IP address automatically** — Select if the Touch Control gets an IP address from the DHCP server on the LAN. • **Enter IP address manually** — Select if the IP address is not automatically assigned.
IP Address	Displays the IP address currently assigned to the Touch Control, if the Touch Control obtains its IP address automatically. If you selected **Enter IP address manually**, enter the IP address here.
Subnet Mask	Displays the subnet mask currently assigned to the Touch Control. If you selected **Enter IP address manually**, enter the subnet mask here.
Default Gateway	Displays the gateway currently assigned to the Touch Control. If you selected **Enter IP address manually**, enter the gateway IP address here.

4 Configure the following **DNS** settings.

Setting	Description
Domain Name	Displays the domain name currently assigned to the Touch Control. If the Touch Control does not automatically obtain a domain name, enter one here.
DNS Servers	Displays the DNS servers currently assigned to the Touch Control. If the Touch Control does not automatically obtain a DNS server address, enter up to two DNS servers here. You can specify IPv4 DNS server addresses only when the IPv4 address is entered manually. When the IPv4 address is obtained automatically, the DNS Server addresses are also obtained automatically.

5 Optionally, view the general settings.

Setting	Description
Duplex Mode	Displays the duplex mode.
LAN Speed	Displays the LAN speed.

Configuring IP Settings

You can configure IP network settings only through the web interface by going to **Admin Settings > Network > IP Network.**

Network Quality Settings

Use this group of settings to specify how your RealPresence Group system responds to quality issues.

Setting	Description
Automatically Adjust People/Content Bandwidth	Specifies whether the system should automatically adjust the bandwidth necessary for the People stream or Content stream depending on the relative complexity of the people video, content video, or both.
Quality Preference	Specifies which stream has precedence when attempting to compensate for network loss: • **Both** People and Content streams • **People** streams • **Content** streams The stream defined to have precedence experiences less quality degradation during network loss compensation than the stream not having precedence. Choosing **Both** People and Content streams means that both streams experience roughly equal degradation. This setting is not available when the **Automatically Adjust People/Content Bandwidth** setting is enabled.

H.323 Settings

If your network uses a gatekeeper, the system can automatically register its H.323 name and extension. This allows others to call the system by entering the H.323 name or extension instead of the IP address.

Setting	Description
Enable IP H.323	Allows the H.323 settings to be displayed and configured.
H.323 Name	Specifies the name that gatekeepers and gateways use to identify this system. You can make point-to-point calls using H.323 names if both systems are registered to a gatekeeper. The **H.323 Name** is the same as the **System Name**, unless you change it. Your organization's dial plan might define the names you can use.
H.323 Extension (E.164)	Lets users place point-to-point calls using the extension if both systems are registered with a gatekeeper, and specifies the extension that gatekeepers and gateways use to identify this system. Your organization's dial plan might define the extensions you can use.

Configure the System to Use a Gatekeeper

A gatekeeper manages functions such as bandwidth control and admission control. The gatekeeper also handles address translation, which allows users to make calls using static aliases instead of IP addresses that can change each day.

To configure the system to use a gatekeeper:

1 In the web interface, go to **Admin Settings > Network > IP Network > H.323 Settings**.

2 Configure the following settings.

Setting	Description
Use Gatekeeper	Select this setting to use a gatekeeper. Gateways and gatekeepers are required for calls between IP and ISDN. • **Off** — Calls do not use a gatekeeper. • **Auto** — System attempts to automatically find an available gatekeeper. • **Specify** — Calls use the specified gatekeeper. This option must be selected to enable H.235 Annex D Authentication. When you select a setting other than **Off**, the **Registration Status** is displayed below the **Enable IP H.323** setting.
Require Authentication	Enables support for H.235 Annex D Authentication. When H.235 Annex D Authentication is enabled, the H.323 gatekeeper ensures that only trusted H.323 endpoints are allowed to access the gatekeeper. This setting is available when **Use Gatekeeper** is set to **Specify**.
User Name	When authentication is required, specifies the user name for authentication with H.235 Annex D.
Enter Password	When authentication is required, specifies the password for authentication with H.235 Annex D.
Current Gatekeeper IP Address	If you chose **Off** for the **Use Gatekeeper** field, the **Current Gatekeeper IP Address** field is not displayed. Displays the IP address that the gatekeeper is currently using.

Setting	Description
Primary Gatekeeper IP Address	• If you chose **Off** for the **Use Gatekeeper** field, the **Primary Gatekeeper IP Address** field is not displayed. • If you chose to use an automatically selected gatekeeper, this area displays the gatekeeper's IP address. • If you chose to specify a gatekeeper, enter the gatekeeper's IP address or name (for example, `10.11.12.13` or `gatekeeper.companyname.usa.com`). The primary gatekeeper IP address contains the IPv4 address the system registers with. As part of the gatekeeper registration process, the gatekeeper might return alternate gatekeepers. If communication with the primary gatekeeper is lost, the RealPresence Group system registers with the alternate gatekeeper but continues to poll the primary gatekeeper. If the system reestablishes communications with the primary gatekeeper, the RealPresence Group system unregisters from the alternate gatekeeper and reregisters with the primary gatekeeper.

Polycom RealPresence Group 300 systems cannot be enabled for multipoint calling.

SIP Settings

If your network supports the Session Initiation Protocol (SIP), you can use SIP to connect IP calls.

To specify SIP settings:

1. In the web interface, go to **Admin Settings > Network > IP Network > SIP.**
2. Configure these settings.

Setting	Description
Enable SIP	Allows the SIP settings to be displayed and configured.
Enable AS-SIP	Enables the RealPresence Group system to apply the settings configured for assured services SIP.

Setting	Description
SIP Server Configuration	Specifies whether to automatically or manually set the SIP server's IP address. If you select **Auto**, the Transport Protocol, Registrar Server, and Proxy Server settings cannot be edited. If you select **Specify**, those settings are editable.
Transport Protocol	Indicates the protocol the system uses for SIP signaling. The SIP network infrastructure your RealPresence Group System operates within determines which protocol is required. **Auto** enables an automatic negotiation of protocols in the following order: TLS, TCP, UDP. This is the recommended setting for most environments. **TCP** provides reliable transport via TCP for SIP signaling. **UDP** provides best-effort transport via UDP for SIP signaling. **TLS** provides secure communication of the SIP signaling. TLS is available only when the system is registered with a SIP server that supports TLS. When you choose this setting, the system ignores TCP/UDP port 5060.
Sign-in Address	Specifies the SIP address or SIP name of the system, for example, mary.smith@department.company.com. If you leave this field blank, the system's IP address is used for authentication.
User Name	Specifies the user name to use for authentication when registering with a SIP Registrar Server, for example, marySmith. If the SIP proxy requires authentication, this field and the password cannot be blank.
Password	Specifies the password associated with the User Name used to authenticate the system to the Registrar Server.

Setting	Description
Registrar Server	Specifies the IP address or DNS name of the SIP Registrar Server. The address can be specified as either an IP address or a DNS fully qualified domain name (FQDN). If registering a remote RealPresence Group System with an Lync Server Edge Server, use the FQDN of the edge server. By default for TCP, the SIP signaling is sent to port 5060 on the registrar server. By default for TLS, the SIP signaling is sent to port 5061 on the registrar server. Enter the address and port using the following format: <IP_Address>:<Port> *<IP_Address>* can be an IPv4 or IPv6 address, or a DNS FQDN such as `servername.company.com:6050`. Syntax Examples: • To use the default port for the protocol you have selected: 10.11.12.13 • To specify a different TCP or UDP port: 10.11.12.13:5071
Proxy Server	Specifies the DNS FQDN or IP address of the SIP Proxy Server. If you leave this field blank, the address of the Registrar Server is used. If you leave both the SIP Registrar Server and Proxy Server fields blank, no Proxy Server is used. By default for TCP, the SIP signaling is sent to port 5060 on the proxy server. By default for TLS, the SIP signaling is sent to port 5061 on the proxy server. The syntax used for this field is the same as for the Registrar Server field.

For more information about this and other Microsoft/Polycom interoperability considerations, refer to the *Polycom Unified Communications Deployment Guide for Microsoft Environments*.

Points to note about SIP:

The SIP protocol has been widely adapted for voice over IP communications and basic video conferencing; however, many of the advanced video conferencing capabilities are not yet standardized. Many capabilities also depend on the SIP server.

The following are examples of features that are not supported using SIP:

- Cascaded multipoint in SIP calls.
- Meeting passwords. If you set a meeting password, SIP endpoints will be unable to dial in to a multipoint call.

For more information about SIP compatibility issues, refer to the *Release Notes for Polycom*® RealPresence® Group Systems.

Configure SIP Settings for Integration with Microsoft Servers

Integration with Microsoft Lync Server 2010 and 2013 allows Microsoft Lync and Polycom RealPresence Group system users to place audio and video calls to each other.

Because Polycom RealPresence Group systems run in dynamic management mode, they cannot be simultaneously registered with Lync Server and the presence service provided by the Polycom Converged Management Service (CMA) or Polycom RealPresence Resource Manager system. RealPresence Group systems can obtain presence services from only one source: Lync Server, or the presence service provided by the CMA or RealPresence Resource Manager system.

Polycom supports the following features in Microsoft Lync Server 2010 and 2013:

- Interactive Connectivity Establishment (ICE)
- Centralized Conferencing Control Protocol (CCCP); this feature is available only with the optional license key
- Federated presence
- The Microsoft real-time video (RTV) codec; this feature is available only with the optional license key

For more information about this and other Microsoft/Polycom interoperability considerations, refer to the *Polycom Unified Communications Deployment Guide for Microsoft Environments*.

If your organization deploys multiple Lync Server pools, a Polycom RealPresence Group system must be registered to the same pool to which the system's user account is assigned.

Configure SIP Settings for Integration with the Telepresence Interoperability Protocol (TIP)

When SIP is enabled on a RealPresence Group system that has the TIP option, the system can interoperate with TIP endpoints.

Points to note about TIP:

- Polycom RealPresence Group systems cannot host multipoint calls while in a SIP (TIP) call.
- SIP (TIP) calls must connect at a call speed of 1 Mbps or higher.
- Only TIP version 7 is supported.
- In a TIP call, only XGA content at 5 fps is supported. The following content sources are not supported in TIP calls:
  - USB content from the Polycom Touch Control
  - People+Content™ IP

For more information about Polycom support for the TIP protocol, refer to the *Polycom Unified Communications Deployment Guide for Cisco Environments*.

You cannot configure TIP without purchasing and installing a Telepresence Interoperability Protocol (TIP) option key code.

RTV and Lync-Hosted Conference Support

To use RTV in a Lync-hosted conference, you must have the RTV option key enabled on your RealPresence Group system.

For more information about configuring your Lync Server video settings for RTV, refer to the *Polycom Unified Communications Deployment Guide for Microsoft Environments*.

AS-SIP Settings

RealPresence Group series systems support the Assured Services Session Initiation Protocol (AS-SIP), as defined by the Unified Capabilities Requirements (UCR) technical standards for telecommunication switching equipment developed by the DoD and Defense Information Systems Agency (DISA). AS-SIP is the term used to describe the DoD version of SIP used as part of its initiative to build a reliable and secure IP communications network. AS-SIP incorporates Multilevel Precedence and Preemption, Secure Signaling and Media, Quality of Service (QoS), and IPv6 support.

Configure AS-SIP Settings

The AS-SIP settings define service codes, network domains, and precedence levels for MLPP.

To enable AS-SIP on your system in the web interface:

1. Go to **Admin Settings > Network > IP Network > SIP**.
2. Select the **Enable AS-SIP** setting.

To configure your AS-SIP settings in the web interface:

1. Go to **Admin Settings > Network > IP Network > AS-SIP**.
2. Configure these settings.

Setting	Description
Service Code	Defines one or more of the US Federal Communications Commission (FCC) N11 special services dialing codes or worldwide special dialing codes.
Outbound Precedence Call Defaults	Defines the **Default Domain** (network domain) and the **Default Precedence** level used when dialing a call.
MLPP Network Domains	Defines the MLPP network domains your network uses.

Define Service Codes

1. To add a **Service Code**, click .
2. In the text field of the new line that appears, enter the numbers.
3. Click another line in the list to create the service code.

You can click to delete any of the service codes.

Define Outbound Precedence Call Defaults

1. Select the **Default Domain** to use for outbound calls, that is, the default network domain.
   RealPresence Group systems come preconfigured for use on the `uc` and `dsn` network domains, but others can be added. Any defined network domain can be chosen as the default domain to use for outbound calls. `uc` and `dsn` are the preconfigured network domains and `uc` is the default network domain for this setting.
2. Select the **Default Precedence** to use for outbound calls.
   This setting accepts one of the defined precedence levels from the configured default domain. The setting defaults to `ROUTINE`, which is the lowest precedence level defined in the default network domain `uc`.

Define MLPP Network Domains

Although `uc` and `dsn` are preconfigured on the system, you can edit their settings or create other network domains.

1. To edit a domain, click .
2. If needed, edit the **Network Domain Name** or change the **Allow Incoming Calls** setting. Disabling the **Allow Incoming Calls** setting causes the system to reject any calls from this network domain.
3. Select a **Precedence Level**.
   You can define a total of 10 precedence levels.
4. Configure these settings.

Setting	Description
Precedence Level	The name associated with the precedence level. You can click **Add Precedence Level** to create a level and you can click to remove a level.
Dial Digit	A single numeric field (0-9) that represents the dialing digit used to indicate the requested call precedence. The precedence dial string is indicated by a leading '9' followed by the Dial Digit, followed by the 7- or 10-digit number.
Resource Priority Header	Represents the value in the SIP Resource Priority Header used to signal the precedence level. This field accepts a single UTF-8 character.
Audio DSCP	Indicates the DSCP value used for audio RTP/SRTP packets sent in calls using this precedence level. The field accepts an integer value range from 0-63.
Video DSCP	Indicates the DSCP value used for video RTP/SRTP packets sent in calls using this precedence level. The field accepts an integer value range from 0-63.

5. Click **Save** when you complete your changes.

To add a network domain, click and then configure the same settings defined above for the new network domain. Click **Save** when you are finished.

Multilevel Precedence and Preemption (MLPP)

Multilevel Precedence and Preemption (MLPP) provides call prioritization over network resources and far-end system access. Authorized users place precedence calls to elevate the priority of the call through the AS-SIP network. Systems already in a call can be preempted by an incoming call with a higher

priority. In addition, precedence call signaling and media packets are marked with DSCP values associated with the precedence level to ensure network QoS commensurate with the call precedence level.

RealPresence Group systems provide support for placing precedence calls through the use of precedence prefix codes in the dial string. Calls can be placed at any of the precedence levels defined within the network domain configured as the default domain for outbound calls. The default network domains `uc` and `dsn` define five precedence levels: **Routine**, **Priority**, **Immediate**, **Flash**, or **Flash Override**. The system signals the precedence level according to the standards in *UCR 2008, Change 3*, and provides appropriate feedback to the user placing the call.

Incoming calls are announced with the appropriate precedence level, and the authorized user can select one of the following ways to handle the call:

- Answer directly
- Join into conference
- Hang up current call and answer

Alternative Network Address Type (ANAT)

ANAT signaling is used for IPv4 and IPv6 support in AS-SIP and is only useful in AS-SIP environments. When AS-SIP is enabled, and dual stack (IPV4 and IPV6) is enabled, ANAT signaling is enabled.

Consider the following restrictions when you enable AS-SIP on a RealPresence Group system:

- Be sure to register the system only to AS-SIP-aware proxy/registrar servers, because AS-SIP signaling can be incompatible with other types of proxy/registrar servers.
- If the Cisco Telepresence Interoperability Protocol (TIP) software option is installed, turn off TIP signaling on the RealPresence Group endpoint by going to **Admin Settings > Network > Dialing Preferences > Dialing Options** and disabling the **TIP** setting. TIP signaling is incompatible with AS-SIP signaling.

Quality of Service

Set the Quality of Service options for the way your network handles IP packets during video calls.

To configure quality of service settings:

1 In the web interface, go to **Admin Settings > Network > IP Network > Quality of Service.**

2 Configure these settings.

Setting	Description
Type of Service	Specifies your service type and lets you choose how to set the priority of IP packets sent to the system for video, audio, far-end camera control, and OA&M: • **IP Precedence** — Represents the priority of IP packets sent to the system. The value can be between 0 and 7. • **DiffServ** — Represents a priority level between 0 and 63. **Note:** If AS-SIP is enabled and you select **DiffServ**, the DSCP values for audio and video defined for the negotiated call precedence level in the default network domain that was configured for outbound calls override the **Video** and **Audio** settings defined on this page of the web interface. If you have not enabled AS-SIP, the **Video** and **Audio** values defined here are used.
Video	Specifies the IP Precedence or Diffserv value for video RTP traffic and associated RTCP traffic.
Audio	Specifies the IP Precedence or Diffserv value for audio RTP traffic and associated RTCP traffic.
Control	Specifies the IP Precedence or Diffserv value for control traffic on any of the following channels: • H.323—H.225.0 Call Signaling, H.225.0 RAS, H.245, Far End Camera Control • SIP—SIP Signaling, Far End Camera Control, Binary Floor Control Protocol (BFCP)
OA&M	Specifies the IP Precedence or Diffserv value for traffic not related to video, audio, or far-end camera control.
Maximum Transmission Unit Size	Specifies whether to use the default Maximum Transmission Unit (MTU) size for IP calls or select a maximize size.
Maximum Transmission Unit Size Bytes	Specifies the MTU size, in bytes, used in IP calls. If the video becomes blocky or network errors occur, packets might be too large; decrease the MTU. If the network is burdened with unnecessary overhead, packets might be too small; increase the MTU.
Enable Lost Packet Recovery	Allows the system to use LPR (Lost Packet Recovery) if packet loss occurs.
Enable RSVP	Allows the system to use Resource Reservation Setup Protocol (RSVP) to request that routers reserve bandwidth along an IP connection path. Both the near site and far site must support RSVP in order for reservation requests to be made to routers on the connection path.

Setting	Description
Dynamic Bandwidth	Specifies whether to let the system automatically find the optimum call rate for a call.
Maximum Transmit Bandwidth	Specifies the maximum transmit call rate between 64 kbps and the system's maximum line rate. This setting can be useful when the system is connected to the network using an access technology that provides different transmit and receive bandwidth (such as cable or DSL access).
Maximum Receive Bandwidth	Specifies the maximum receive call rate between 64 kbps and the system's maximum line rate. This setting can be useful when the system is connected to the network using an access technology that provides different transmit and receive bandwidth (such as cable or DSL access).
Note: When a RealPresence Group 500 or RealPresence Group 700 system is hosting a multipoint call, the total call rate for all sites in the call is 6 Mbps.	

Lost Packet Recovery and Dynamic Bandwidth

You can handle video quality issues by selecting the **Enable Lost Packet Recovery** (LPR) setting, the **Dynamic Bandwidth** setting, or both settings.

If both settings are enabled, Dynamic Bandwidth adjusts the video rate to reduce packet loss to 3% or less. When packet loss drops to 3% or less, LPR cleans up the video image on your monitor. The additional processing power required might cause the video rate to drop while the system is using LPR. If this happens, the Call Statistics screen shows the Video Rate Used as lower than the Video Rate. If Packet Loss is 0 for at least 10 minutes, LPR stops operating and the Video Rate Used increases to match the Video Rate.

If only LPR is enabled and the system detects packet loss, LPR attempts to clean the image but the video rate is not adjusted. If only Dynamic Bandwidth is enabled and the system detects packet loss of 3% or more, the video rate is adjusted but LPR does not clean the image.

You can view % Packet Loss, Video Rate, and Video Rate Used on the Call Statistics screen.

Configure the System for Use with a Firewall or NAT

A firewall protects an organization's IP network by controlling data traffic from outside the network. Unless the firewall is designed to work with H.323 video conferencing equipment, you must configure the system and the firewall to allow video conferencing traffic to pass in and out of the network.

Network Address Translation (NAT) network environments use private internal IP addresses for devices within the network, while using one external IP address to allow devices on the LAN to communicate with other devices

outside the LAN. If your system is connected to a LAN that uses a NAT, you will need to enter the **NAT Public (WAN) Address** so that your system can communicate outside the LAN.

To set up the system to work with a firewall or NAT:

1. In the web interface, go to **Admin Settings > Network > IP Network > Firewall.**
2. Configure these settings.

Setting	Description
Fixed Ports	Lets you specify whether to define the TCP and UDP ports. • If the firewall is not H.323 compatible, enable this setting. The RealPresence Group system assigns a range of ports starting with the TCP and UDP ports you specify. The system defaults to a range beginning with port 3230 for both TCP and UDP. **Note**: You must open the corresponding ports in the firewall. For H.323, you must also open the firewall's TCP port 1720; for SIP you must open either UDP port 5060, TCP 5060, or TCP 5061 depending on whether you are using UDP, TCP, or TLS as the SIP transport protocol. • If the firewall is H.323 compatible or the system is not behind a firewall, disable this setting. For IP H.323 you need 2 TCP and 8 UDP ports per connection. For SIP you need TCP port 5060 and 8 UDP ports per connection. **Note:** Because RealPresence Group systems support ICE, the range of fixed UDP ports is 112. The RealPresence Group system cycles through the available ports from call to call. After the system restarts, the first call begins with the first port number, either 49152 or 3230. Subsequent calls start with the last port used, for example, the first call uses ports 3230 to 3236, the second call uses ports 3236 to 3242, the third call uses ports 3242 through 3248, and so on.
TCP Ports **UDP Ports**	Specifies the beginning value for the range of TCP and UDP ports used by the system. The system automatically sets the range of ports based on the beginning value you set. **Note**: You must also open the firewall's TCP port 1720 to allow H.323 traffic.

Setting	Description
Enable H.460 Firewall Traversal	Allows the system to use H.460-based firewall traversal for IP calls. For more information, refer to H.460 NAT Firewall Traversal on page 46.
NAT	Specifies whether the system should determine the NAT Public WAN Address automatically. • If the system is not behind a NAT or is connected to the IP network through a Virtual Private Network (VPN), select **Off**. • If the system is behind a NAT that allows HTTP traffic, select **Auto**. • If the system is behind a NAT that does not allow HTTP traffic, select **Manual**.
NAT Public (WAN) Address	Displays the address that callers from outside the LAN use to call your system. If you chose to configure the NAT manually, enter the NAT Public Address here. This field is editable only when **NAT Configuration** is set to **Manual**.
NAT is H.323 Compatible	Specifies that the system is behind a NAT that is capable of translating H.323 traffic. This field is visible only when **NAT Configuration** is set to **Auto** or **Manual**.
Address Displayed in Global Directory	Lets you choose whether to display this system's public or private address in the global directory. This field is visible only when **NAT Configuration** is set to **Auto** or **Manual**.
Enable SIP Keep-Alive Messages	Specifies whether to regularly transmit keep-alive messages on the SIP signaling channel and on all RTP sessions that are part of SIP calls. Keep-alive messages keep connections open through NAT/Firewall devices that are often used at the edges of both home and enterprise networks. When a RealPresence Group system is deployed or registered in an Avaya SIP environment, Polycom recommends that you disable this setting to allow calls to connect fully.

In environments set up behind a firewall, firewall administrators can choose to limit access to TCP connections only. Although TCP is an accurate and reliable method of data delivery that incorporates error-checking, it is not a fast method. For this reason, real-time media streams often use UDP, which

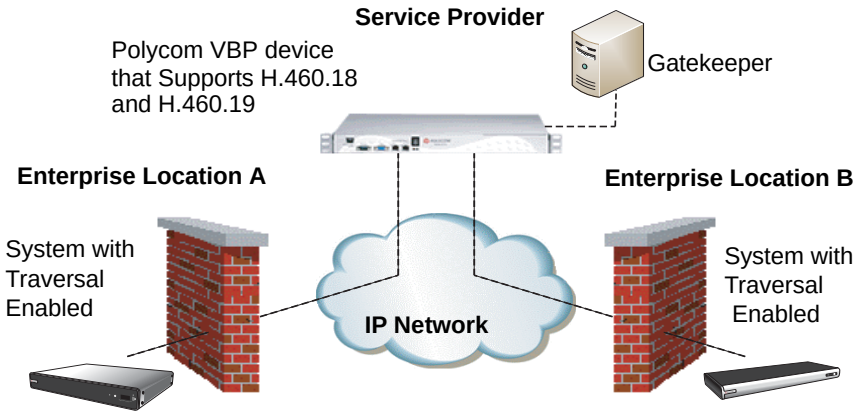
offers speed but not necessarily accuracy. Within an environment behind a firewall, where firewall administrator has restricted media access to TCP ports, calls can be completed using a TCP connection instead of UDP.

Systems deployed outside a firewall are potentially vulnerable to unauthorized access. Visit the Polycom Security section of the Knowledge Base at support.polycom.com for timely security information. You can also register to receive periodic email updates and advisories.

H.460 NAT Firewall Traversal

You can configure RealPresence Group systems to use standards-based H.460.18 and H.460.19 firewall traversal, which allows video systems to more easily establish IP connections across firewalls.

The following illustration shows how a service provider might provide H.460 firewall traversal between two enterprise locations. In this example the Polycom Video Border Proxy™ (VBP®) firewall traversal device is on the edge of the service provider network and facilitates IP calls between RealPresence Group systems behind different firewalls.



To use this traversal, RealPresence Group systems and firewalls must be configured as follows:

1. Enable firewall traversal on the RealPresence Group system.
   a. In the web interface, go to **Admin Settings > Network > IP Network > Firewall**.
   b. Select **Enable H.460 Firewall Traversal**.
2. Register the RealPresence Group system to an external Polycom VBP device that supports the H.460.18 and H.460.19 standards.
3. Make sure that firewalls being traversed allow RealPresence Group systems behind them to open outbound TCP and UDP connections.

- Firewalls with a stricter rule set should allow RealPresence Group systems to open at least the following outbound TCP and UDP ports: 1720 (TCP), 14085-15084 (TCP) and 1719 (UDP), 16386-25386 (UDP).
- Firewalls should permit inbound traffic to TCP and UDP ports that have been opened earlier in the outbound direction.

Basic Firewall/NAT Traversal Connectivity

Basic Firewall/NAT Traversal Connectivity allows RealPresence Group systems to connect to the SIP-based RealPresence solutions using the Acme Packet Net-Net family of Session Border Controllers (SBC). A RealPresence Group system connects to the Acme Packet Net-Net SBC as a remote enterprise endpoint. The remote enterprise endpoint is registered to the enterprise's SIP infrastructure and connects to an internal enterprise endpoint through the enterprise firewall.

For details about the use and configuration of the Acme Packet Net-Net SBC used in conjunction with this feature, refer to *Deploying Polycom Unified Communications in an Acme Packet Net-Net Enterprise Session Director Environment*.

RealPresence Group systems now also provide full mutual TLS support for SIP and XMPP Presence connections. Full mutual TLS support gives administrators the ability to identify and authenticate devices attempting to join conferences from outside the enterprise network.

Configuring Dialing Preferences

Dialing preferences help you manage the network bandwidth used for calls and establish a Scalable Video Coding (SVC) preference. You can specify the default and optional call settings for outgoing calls. You can also limit the call speeds of incoming calls.

SVC feature and relevant options are not available in this release of RealPresence Group 550 systems.

Dialing Options

To configure dialing options:

1. In the web interface, go to **Admin Settings > Network > Dialing Preference > Dialing Options.**

2 Configure these settings.

Setting	Description
Scalable Video Coding Preference (H.264)	Specifies whether to use scalable or advanced video coding: • **SVC then AVC**—Use SVC when possible; otherwise, use AVC. • **AVC Only**—This option disables SVC.
Enable H.239	Specifies standards-based People+Content data collaboration. Enable this option if you know that H.239 is supported by the far sites you will call.
Video Dialing Order	Specifies how the system places video calls to directory entries that have more than one type of number. • **IP H.323** • **SIP** This setting also specifies how the system places video calls from the Place a Call screen when the call type selection is either unavailable or set to **Auto**. If a call attempt does not connect, the system tries to place the call using the next call type in the list.

SVC-Based Conferencing

In an SVC-based conference, each SVC-enabled endpoint transmits multiple bit streams, called simulcasting, to the Polycom RealPresence Collaboration Server (RMX). The RealPresence Collaboration Server sends or relays selected video streams to the endpoints without sending the entire video layout. The streams are assembled into a layout by the SVC-enabled endpoints according to each of their different display capabilities and layout configurations.

Advantages and Configuration Examples

SVC-based conferencing provides several benefits, including fewer video resource requirements, better error resiliency, lower latency, and more flexibility with display layouts. For example, on RealPresence Group Series systems in a four-way call, the layout is 1+3, which is the current speaker in a large window and the other participants in smaller windows below the current speaker.

The following table shows the layout, resolutions, and frame rates for four-way calls at different call speeds.

Call Speed	Layout	Current Speaker	Participants
1920 kbps	1+3	720p30	360p15
1472 kbps	1+3	720p30	360p7.5
1024 kbps	1+3	720p15	180p15
768 kbps	1+3	720p7.5	180p7.5
512 kbps	1+3	360p7.5	180p7.5
384 kbps	1+2	180p15	180p7.5
256 kbps	1+1	180p7.5	180p7.5
128 kbps	N/A	Audio Only	Audio Only
The maximum layout is 1+3 for four or more call participants. Experience may differ with fewer participants.			

Enabling and Disabling SVC Calls

You can make and receive SVC calls when the Polycom RealPresence Group system is connected to an SVC-compatible bridge. Enable or disable SVC calls from the Dialing Preferences screen in the web interface.

For more information about the features and limitations of SVC-based conferencing, refer to the *Polycom RealPresence SVC-Based Conferencing Solutions Deployment Guide* available at support.polycom.com.

Preferred Speeds

To configure dialing speeds:

1. In the web interface, go to **Admin Settings > Network > Dialing Preference > Preferred Speeds**.
2. Configure these settings.

Setting	Description
Preferred Speed for Placed Calls **IP Calls** **SIP (TIP) Calls**	Determines the speeds to use for IP or SIP (TIP) calls from this system when either of the following statements is true: • The call speed is set to **Auto** on the Place a Call screen • The call is placed from the directory If the far-site system does not support the selected speed, the system automatically negotiates a lower speed. Users cannot specify a call speed when placing calls from the Polycom Touch Control. The **SIP (TIP) Calls** setting is available only when the **TIP** setting is enabled.
Maximum Speed for Received Calls **IP Calls** **SIP (TIP) Calls**	Allows you to restrict the bandwidth used when receiving IP or SIP (TIP) calls. If the far site attempts to call the system at a higher speed than selected here, the call is renegotiated at the speed specified in this field. The **SIP (TIP) Calls** setting is available only when the **TIP** setting is enabled.

For point-to-point calls, the Polycom RealPresence Group 300 systems use a maximum of 3 Mbps of bandwidth, the RealPresence Group 500 and RealPresence Group 550 systems use a maximum of 6 Mbps.

Finding Your System's IP Address

You can find your RealPresence Group system's IP address in the local and the web interfaces:

- In the local interface, in **Settings > Administration > LAN Properties: IP Address**
- In the local interface, if the administrator has configured the system to show the IP address, at the top of the menu that is displayed when you press with the remote control and on the Home screen
- In the web interface, at the top of the page next to the language drop-down list and in **Admin Settings > Network > LAN Properties: Your IP Address is**

3

Monitors and Cameras

Connecting Monitors

Make sure that the system is powered off before you connect devices. For more information about connecting monitors to RealPresence Group systems, refer to Appendix A, System Back Panel Views, on page 193.

Configuring Monitor Settings

The system constantly detects monitors connected to it. You have the choice to use or not use the monitor through the **Enable** setting. You can also a monitor profile to manage a group of monitor settings.

To configure monitors:

1. In the web interface, go to **Admin Settings > Audio/Video > Monitors.**
2. Configure these settings on the Monitors page. The settings for Monitor 1, Monitor 2, and Monitor 3 are the same, although the available options can be different.

Setting	Description
Enable	Specifies the monitor setting: • **Auto** – This is the default setting. Specifies that the **Video Format** and **Resolution** settings are automatically detected and disables those settings. • **Manual** – Enables you to select the **Video Format** and **Resolution** settings. **Resolution** settings are filtered based on the **Video Format** you selected. • **Off** – Disable this monitor.

Setting	Description
Monitor Profile	Specifies which profile to use for this monitor. The choices depend on how many monitors the system uses and which monitor you are configuring.
Video Format	Specifies the monitor's format. Depending on which RealPresence Group System and monitor you configure, the choices are: • **HDMI** • **DVI** • **Component** • **VGA** **Note:** This setting is unavailable when you select **Auto** for the **Enable** setting.
Resolution	Specifies the resolution for the monitor. **Note:** This setting is unavailable when you select **Auto** for the **Enable** setting.

Monitor Profiles

Monitor Profiles set the preferences for what is shown on available monitors. Configuring this setting allows you to customize the monitor configuration to match your environment or your desired meeting experience.

The Monitor Profiles settings are just preferences. What you see can vary depending on layout views, whether content is being shown, the number of active monitors, and so on.

Monitor Profiles are not supported for SVC calls.

The following table describes the configuration of each monitor profile.

Setting	Description
Decide for Me	Default setting that sets monitors to show content and people speaking based on a variety of factors. When you select **Decide for Me**, the settings for Monitor 2 and Monitor 3 are unavailable. If you later choose a different setting, the original values persist.
Me Only	Sets the monitor to always show you.
Speaker Only	Sets the monitor to show current people speaking at the far-end on Monitor 1. Monitor 2 shows only one person.

Setting	Description
Content Only	Sets the monitor to show available content. Otherwise, the monitor shows the room background.
Speaker and Content	Sets the monitor to show available content. Otherwise, the monitor shows the person speaking at the far-end. You can browse layouts with this setting.
Recording Device with Speaker and Content	Sets the monitor to show available content or the person speaking to support recording with a DVR. The showing of content takes priority over the showing of a person speaking.
Recording Device with Speaker Only	Sets the monitor to show the current person speaking, regardless of the speaker's location, to support recording with a DVR.

Triple-Monitor Mode

The RealPresence Group 550 systems support triple-monitor mode. This feature enables you to have full-size view on local video, remote video, and content simultaneously.

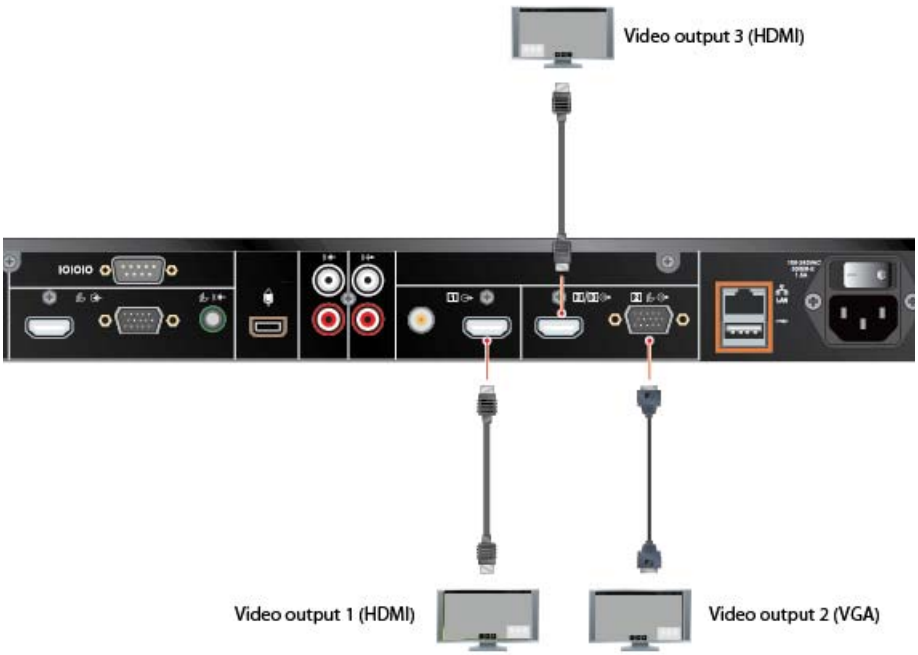
To use this feature, you need to connect three monitors to the system and then set up the monitors accordingly.

Make sure that the system is powered off before you connect the monitors.

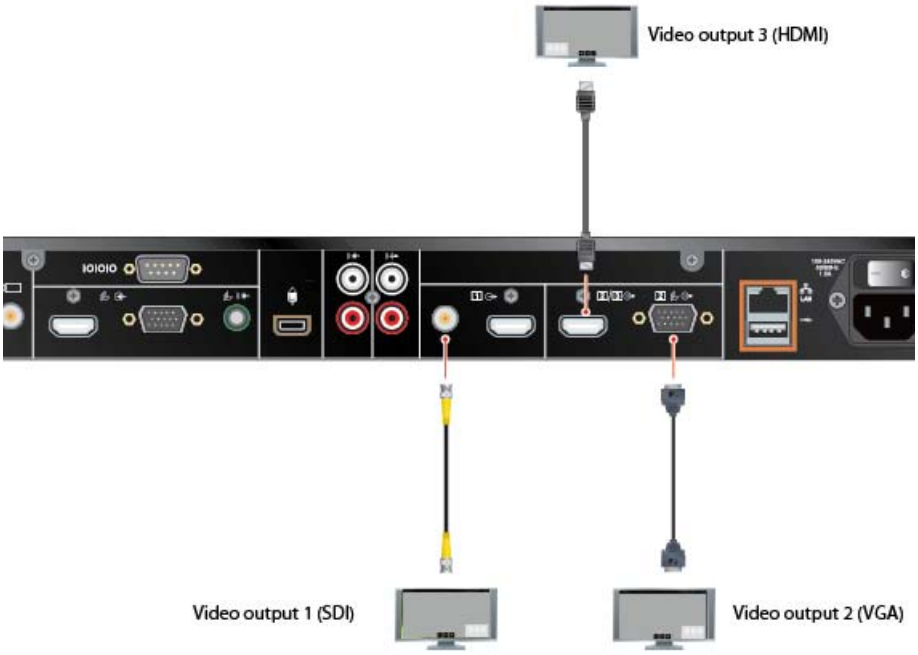
To connect three monitors to the system:

- Do one of the following:

– Connect one monitor to the VGA port, the other two to the HDMI ports:



– Connect three monitors with VGA, HDMI, and SDI connectors to the corresponding ports:



When the SDI port is used for video output 1, the video output is not available during the factory reset because the monitor resolution is set to 640 x 480 by default.

To configure Monitors for use with triple-monitor:

1. Go to **Admin Settings > Video / Audio > Monitors**.
2. Enter settings for Monitor 1 as desired.
3. For Monitor 2, set **Enable** as **Manual**, and **Video Format** as **VGA.**
4. For Monitor 3, set **Enable** as **Auto.**

   For more information on monitor configurations, see To configure monitors: on page 51.

Video Output in Meetings

This table shows the monitor display in triple-monitor mode.

Video Output	Call, with Content	Call, No Content	No Call, Content	No Call, No Content
Video output 1 (SDI or HDMI)	Remote people	Remote people	Preset background image	Preset background image
Video output 2 (VGA)	Content	Local people	Content	Preset background image
Video output 3 (HDMI)	Local people	Local people	Local people	Local people

If you have one monitor only, connect it to either of the video output 1 ports (SDI or HDMI) according to your monitor type.

If you have two monitors only, connect them to the video output 1 (SDI or HDMI) and video output 2 (HDMI or VGA) ports accordingly.

Maximizing Video Display on Your HDTV

When you use a television as your monitor, some of the HDTV's settings could interfere with the video display or quality of your calls. To avoid this potential problem, you should disable all audio enhancements in the HDTV menu, such as "SurroundSound."

In addition, many HDTVs have a low-latency mode called Game Mode, which could lower video and audio latency. Although Game Mode is typically turned off by default, you could have a better experience if you turn it on.

Finally, before attaching your Polycom RealPresence Group system to a TV monitor, ensure the monitor is configured to display all available pixels. This setting, also known as "fit to screen" or "dot by dot," enables the entire HD image to be displayed. The specific name of the monitor setting varies by manufacturer.

Using Sleep Settings to Prevent Monitor Burn-In

Monitors and Polycom RealPresence Group systems provide display settings to help prevent image burn-in. Plasma televisions can be particularly vulnerable to this problem. Refer to your monitor's documentation or manufacturer for specific recommendations and instructions. The following guidelines help prevent image burn-in:

- Ensure that static images are not displayed for long periods.
- Set the **Time before system goes to sleep** to 60 minutes or less.
- To keep the screen clear of static images during a call, disable the following settings:
  - **Display Icons in a Call** described on page 92
  - **Show Time in Call** described on page 166
- Be aware that meetings that last more than an hour without much movement can have the same effect as a static image.
- Consider decreasing the monitor's sharpness, brightness, and contrast settings if they are set to their maximum values.

Connecting Cameras

Polycom RealPresence Group 700 systems provide inputs for multiple PTZ cameras. RealPresence Group 500 systems can support a second non-PTZ camera, but do not support camera control for a second camera. All Polycom cameras are capable of receiving IR signals.

Polycom RealPresence Group systems have built-in IR receivers to receive signals from the remote control. Be sure to point the remote control at the RealPresence Group system or your Polycom Camera to control it.

HDCI cameras have Infrared receivers. You can always control the RealPresence Group 550 system by pointing the remote control towards either the Polycom RealPresence Group 550 system hardware or to the HDCI camera (if connected).

You may need a special cable to connect an SDI camera to the system so as to receive infrared signals from the remote control. For more information about the special cable, contact your Polycom support.

Polycom EagleEye™ III

The Polycom EagleEye™ III camera can provide 1080i 60/50 fps, 1080p 60 fps, and 720p 60/50 fps resolutions on all Polycom RealPresence Group systems.

RealPresence Group systems can provide power to the EagleEye III camera through an HDCI connector. This configuration allows a sleeping EagleEye III camera to wake up by receiving a signal from the camera's IR sensor. The camera does not require any additional power supply or IR extender.

The RealPresence Group 700 system supports a low-power standard that limits the power supplied to the camera when the system is powered off. When the EagleEye III camera is only receiving power from the system, it does not have an active IR receiver capable of turning the RealPresence Group system on using the handheld remote.

If the camera IR is the only exposed IR and you normally turn the system on and off with the handheld remote control, use one of these alternate solutions:

- Provide direct power to the Eagle Eye III camera with the optional EagleEye camera power supply, 1465-52748-040. This allows the IR sensor to remain powered on, so that the camera is capable of receiving IR commands from the remote control.
- Position the RealPresence Group system so that the IR receiver on the front of the system has a line-of-sight to the remote control.
- Use a third-party IR extender to extend the IR signal from the room to the IR receiver on the front of the RealPresence Group system.

Polycom EagleEye Acoustic

The Polycom EagleEye Acoustic camera can provide 1080p 25/30 fps resolution with embedded image sensor processing (ISP) technology and has an auto focus lens system, two microphones for stereo audio pickup, an IR detector, a status LED, and a captured HDCI cord for connection to the system.

Polycom EagleEye Director

The Polycom EagleEye Director is a high-end automatic camera positioning system that works in conjunction with a Polycom RealPresence Group system to provide accurate close-up views of the person who is speaking. The EagleEye Director also provides smooth transitions between the close-up view of the person who is speaking and the room view.

The EagleEye Director uses a dual-camera system. While one camera tracks the person who is speaking, the other camera captures the room view. The EagleEye Director shows the room view while the camera moves from one speaker to another. When the tracking camera locates a person who is speaking, the EagleEye Director camera switches to a close-up of that person.

By providing automatic and intelligent views in various speaking scenarios during a conference, the EagleEye Director delivers a user experience similar to a newscast video production.

Polycom EagleEye II

The Polycom EagleEye II camera can provide 1080i 60/50 fps for Polycom RealPresence Group systems.

Polycom EagleEye HD

You can use the Polycom EagleEye HD camera with all Polycom RealPresence Group systems. Polycom EagleEye HD cameras provide 720p resolution.

Polycom EagleEye 1080

You can use the Polycom EagleEye 1080 camera for RealPresence Group systems with the 1080p Resolution option installed to send 1080p video. You can also use the Polycom EagleEye 1080 camera with systems that do not have the 1080p Resolution option, to see local video in 1080 format.

When connecting a Polycom EagleEye 1080 camera to any input on a Polycom RealPresence Group system, use the cable and power supply that come with the camera. You must always use the power supply because the Polycom EagleEye 1080 camera does not receive power from the RealPresence Group system.

Polycom EagleEye View

The Polycom EagleEye View camera is a manual-focus, electronic pan, tilt, and zoom (EPTZ) camera that includes built-in stereo microphones and a privacy shutter. The Polycom EagleEye View camera is available with the Polycom RealPresence Group systems as the system camera and the main microphone. For more information about the Polycom EagleEye View microphones, refer to Using the Polycom EagleEye™ View and EagleEye Acoustic Microphones on page 74.

When connecting a Polycom EagleEye View camera, use the cable with the brown connector that comes with the camera if you want to use the camera's built-in microphones. Other cables do not carry the audio signals.

You can install the Polycom EagleEye View in a base-down orientation or inverted. To change the camera's orientation after installation, disconnect all cables attached to the camera. Then install the camera with the preferred orientation and reconnect the camera.

The Polycom EagleEye View camera can provide 1080i video to RealPresence Group systems.

SDI Cameras

SDI cameras allow long-distance transmission of high definition images without degrading the video quality. You can control the camera settings using the RS-232 port.

Polycom has verified the interoperability with two SDI camera models: Sony EVI-HD1 and Minrray MR820V-LK.

Connecting Cameras to Polycom RealPresence Group Systems

Refer to your system's setup sheet and to the *Integrator's Reference Manual for the Polycom RealPresence Group Series* for connection details. Refer to the release notes for a list of supported PTZ cameras. If you connect a supported PTZ camera, the system detects the camera type and sets the appropriate configuration. Make sure that the system is powered off before you connect devices to it.

Do not connect more than one Polycom EagleEye Director to a single RealPresence Group system.

Dual-Camera Support

You can connect two cameras to the system at the same time as the video input source. You can switch between the two cameras, either from the local user interface, or from the Web user interface.

The driver always reports 1080p resolution when an SDI camera is detected. You need to change the SDI camera to appropriate resolution manually.

To connect two cameras to the system:

1. Connect an HDCI camera, for example, the Polycom EagleEye III camera, to the video input 1 port.
2. Connect an SDI camera to the video input 2 port. You need to connect it to the SDI and the serial ports at the same time.

The cabling is as follows:

Configuring Video Input Settings

Refer to Appendix A, System Back Panel Views, on page 193 for an illustrated view of the inputs and outputs available for each RealPresence Group system. Although you can connect devices that are not automatically discovered, the available choices in the interface might not be the same as they would for automatically discovered devices. For example, third-party cameras are not supported in RealPresence Group systems, but if you connect an unsupported camera anyway, the system will attempt to show video. Polycom does not guarantee that the results will be optimal or that you will be able to set up the camera the same as a supported camera.

To configure camera and video settings in the web interface:

>> Go to **Admin Settings >Audio/Video > Video Inputs**.

Configuring General Camera Settings

Setting	Description
Allow Other Participants In a Call to Control Your Camera	Specifies whether other sites can adjust the view in your camera.
Power Frequency	Specifies the power line frequency for your system. In most cases, the system defaults to the correct power line frequency, based on the video standard used in the country where the system is located. This setting allows you to adapt the system in areas where the power line frequency does not match the video standard used. You might need to change this setting to avoid flicker from the fluorescent lights in your conference room.
Make This Camera Your Main Camera	Specifies which is the primary camera. You specify the main camera when you set up the system, but you can change that selection here. Input 1 is typically your main camera.
Enable People+Content™ IP	Enables the ability to use the People+Content IP application.
Enable Camera Preset Snapshot Icons	Enables the use of snapshot icons that represent camera preset configurations. The default setting is controlled by the Security Profile, but you can change the default here. If you change your security profile setting from **Low** or **Medium** to **High** or **Maximum**, or if you disable the setting, the RealPresence Group system replaces each preset image with a blue, striped box. Presets that have not been configured show as empty rectangles. When you disable the **Enable Camera Preset Snapshot Icons** setting in the web interface, the blue, striped boxes in the local interface show you which presets are configured, but enabling the setting does not redisplay the shapshot icons. You can see shapshot icons that represent preset configuration images only when you configure a preset with the **Enable Camera Preset Snapshot Icons** setting enabled.

Configuring Input Settings

Configure the following settings for each Input connected to your RealPresence Group system.

Settings that don't apply to the selected input are not displayed.

Setting	Description
Enable	Specifies the input type. You can also choose to **Auto** select the input type. For RealPresence Group 300 , and RealPresence Group 500, and RealPresence Group 550 systems, Input 1 is always HDCI, so you will not see an **Enable** setting here. **Note:** RealPresence Group 300 systems have only one video input. RealPresence Group 500 systems have two video inputs, but only HDCI and VGA are allowed for the second input. RealPresence Group 550 systems have three video inputs, but only SDI is allowed for the second input, HDMI and VGA are allowed for the third input.
Model	Displays the type of device using the input port.
Name	Displays the default name of the input, but you can enter your own name for the device.
Display as	Specifies whether the input is to be used for **People** or **Content**. The selection you make here determines the available settings for the device in the embedded interface. For example, a People source has settings for PTZ and near/far camera control, but a Content source has different settings. In this release of the RealPresence Group 550 systems, you can only set **Input 1** and **Input 2** for **People**, and **Input 3** for **Content**.
Input format	Specifies the source type of the device. This setting is read only unless the system does not detect the device.

Setting	Description
Optimized for	Specifies **Motion** or **Sharpness** for the video input. • **Motion** — This setting is for showing people or other video with motion. • **Sharpness** — The picture will be sharp and clear, but moderate to heavy motion at low call rates can cause some frames to be dropped. Sharpness is available in point-to-point H.263 and H.264 calls only. It is required for HD calls between 512 kbps and 2 Mbps.
Use Voices to Track People	Specifies whether voice tracking is on or off. If camera tracking has not been calibrated, the setting is unavailable. This setting is available only when you have installed an EagleEye Director.
Tracking Speed	Determines how quickly the system finds someone new and switches to that person. This setting is available only when you have installed an EagleEye Director.
Backlight Compensation	Specifies whether to have the camera automatically adjust for a bright background. Backlight compensation is best used in situations where the subject appears darker than the background. Enabling this setting helps to relieve a bright background, which can impact the tracking performance of the Polycom EagleEye Director.
White Balance	Specifies whether to use the **Auto** or **Manual** setting to adjust neutral colors in the image. You can also make a selection based on the type of ambient light in the room. The following settings are based on the type of light: • **Indoor** (approximately 3200 K) • **3680 K** • **4160 K** • **4640 K** • **5120 K** • **Outdoor** (approximately 5600 K)
Brightness	Provides a slider to adjust how bright the image is.
Color Saturation	Provides a slider to adjust how colorful the image is.

Configuring the Polycom EagleEye Director

Use the remote control or web interface to configure the Polycom EagleEye Director. You cannot configure the EagleEye Director using the Polycom Touch Control, but you can start and stop camera tracking.

Getting Started

Refer to *Setting up the Polycom EagleEye Director* for information about how to set up the EagleEye Director.

After setting up the EagleEye Director, follow these steps to get started:

1. Power on EagleEye Director.

   You can verify that the device is detected and compatible with the RealPresence Group system's software on the System Status page. Do one of the following:

   - In the local interface, go to **Settings > System Information > Status > EagleEye Director**.
   - In the web interface, go to **Diagnostics > System > System Status > EagleEye Director**.

   As long as you see **EagleEye Director** among the status settings, the device has been detected.

2. Calibrate the cameras. Refer to Calibrating the EagleEye Director Cameras on page 65 for instructions. If you notice that the speaker is not framed accurately, ensure that the vertical bar of the EagleEye Director is vertical. Placing the EagleEye Director on a horizontal surface can help to ensure that the vertical bar is vertical. You might also need to recalibrate the cameras.

3. Adjust the room view. Refer to Adjusting the Room View on page 65 for instructions.

Points to note when detecting the Polycom EagleEye Director

When the system first detects the EagleEye Director, a calibration wizard starts. If the EagleEye Director is not detected, try one of the following solutions:

- Ensure all cables are tightly plugged in, then attempt camera detection again. If you are using EagleEye Director version 1.0 software, you might need to ensure that the ball stubs are tightly pressed into the hole on the base after checking the cables.
- Restart the RealPresence Group system.
- Manually power off the EagleEye Director by unplugging its power supply and unplugging the HDCI cable from the RealPresence Group system. Then power on the EagleEye Director, plug the HDCI cable into the RealPresence Group system, and attempt camera detection again.

Calibrating the EagleEye Director Cameras

1. Do one of the following:
   - In the local interface, go to **Settings > Administration > Camera Tracking > Calibration**.
   - In the web interface, go to **Admin Settings > Audio/Video > Video Inputs** and select **Calibrate Voice Tracking**.
2. Follow the directions in the Auto Calibration page that appears. When you click **Start**, auto-calibration begins. When the automatic process ends, you have these choices:
   - **Yes, I see a green box around my mouth.** Selecting this choice means auto-calibration was successful and you can move forward with adjusting the room view, if you like.
   - **No, I see a green box, but it is not around my mouth.** Selecting this choice means you can try auto-calibration again or manually calibrate the camera.
   - **No, I do not see a box at all.** Selecting this choice means you must manually calibrate the camera.
3. If necessary, follow these steps to manually calibrate the camera:
   a. Use the arrow buttons and zoom controls on the remote control or web interface to zoom completely in, then aim the camera at your mouth.
   b. Select **Begin Calibration** or **Start** and follow the onscreen instructions until a message displays indicating successful calibration.

Ensure that only one person speaks while you are calibrating the cameras and keep the background quiet.

If you rearrange or move the Polycom EagleEye Director, recalibrate it.

If you cannot successfully calibrate the cameras, ensure that all seven EagleEye Director tracking microphones are working correctly. Five of those microphones are horizontal and two are vertical reference audio microphones. Calibration fails if any of the microphones do not work. For ways to test microphone functionality, refer to the **Camera Tracking** settings on page 178.

Adjusting the Room View

1. Do one of the following:
   - From the local interface, go to **Administrative > Camera Tracking > Calibration**, and then select **Begin Calibration**.
   - From the web interface, go to **Admin Settings > Audio/Video > Video Inputs**, and then select the **Input** used by the Polycom EagleEye Director.

2 Do one of the following:

- In the local interface, select **Skip** to move to the Adjust Room View screen.
- In the web interface, select **Adjust Room View**.

3 Use the arrow buttons and zoom controls on the remote control or web interface to show the room view you want far site participants to see.

4 Select **Finish** to save the settings and return to the Camera Settings screen.

Enabling and Disabling Camera Tracking with EagleEye Director

If EagleEye Director tracking is enabled, the camera follows the person or people who are speaking. This tracking action, also called automatic camera positioning, can be manually started or stopped.

To enable camera tracking:

>> Do one of the following:

- In the local interface, go to **Settings > Administration > Camera Tracking > Settings**.

  >> For the **Tracking Mode** setting, select **Voice**.
  This is the default tracking mode. In this mode, the camera automatically tracks the current speaker in the room using a voice tracking algorithm.

  When you select the **Voice Tracking Mode**, you can also choose the **Tracking Speed**. This speed determines how quickly the camera moves to each person who speaks. The default speed is **Normal**.

  If voice tracking does not work as expected, make sure the microphones are functioning properly. For ways to test microphone functionality, refer to the **Camera Tracking** settings on page 178.

- In the web interface, go to **Admin Settings** > **Audio/Video > Video Inputs**, and then select the **Input** used by the Polycom EagleEye Director.

  >> Enable the **Use Voices to Track People** setting.

- If the RealPresence Group system is paired with a Polycom Touch Control, follow these steps:

  1. Touch **Cameras** on the Home screen or the Call screen.
  2. If the EagleEye Director is not currently selected, select it:
     a. Touch **Select Cameras** and select the EagleEye Director camera.
     b. Touch **Control Camera**.
  3. Select **Start Camera Tracking.**

To disable camera tracking:

>> Do one of the following:

- In the local interface, go to **Settings > Administration > Camera Tracking > Settings**.

  >> For the **Tracking Mode** setting, select **Off**.
  In this mode, the tracking function is disabled. You must manually move the camera using the remote control or the Polycom Touch Control.

- In the web interface, go to **Admin Settings** > **Audio/Video > Video Inputs**, and then select the **Input** used by the Polycom EagleEye Director.

  >> Disable the **Use Voices to Track People** setting.

- If the RealPresence Group system is paired with a Polycom Touch Control, touch **Cameras** on the Home screen or the Call screen and select **Stop Camera Tracking.**

To start or stop camera tracking in the local interface:

>> Whether you are or are not in a call, go to **Menu > Cameras** and select **Start Camera Tracking** or **Stop Camera Tracking**, as needed.

Camera tracking can also start or stop based on the following actions:

- Camera tracking starts automatically when you make a call.
- Camera tracking stops after you hang up a call.

- Camera tracking temporarily stops when you mute the RealPresence Group system in a call. It resumes when you unmute the system. If camera tracking is disabled, pressing Mute on the remote control does not affect tracking.

Tracking performance can be affected by room lighting. If the room is too bright for camera tracking to work properly, you can improve the tracking performance by adjusting the **Backlight Compensation** setting on the Cameras screen. To find this setting in the web interface, you can go to **Admin Settings** > **Audio/Video** > **Video Inputs** and select the appropriate **Input**.

Configuring Camera Presets

Camera presets are stored camera positions that you can create in the local interface before or during a call.

Presets allow users to:

- Automatically point a camera at pre-defined locations in a room.
- Select a video source.

If your camera supports pan, tilt, and zoom movement, and it is set to People, you can create up to 10 preset camera positions for it using the remote control or keypad, or the Polycom Touch Control. Each preset stores the camera number, its zoom level, and the direction it points (if appropriate). Presets remain in effect until you change them.

If far-site camera control is allowed, you can create 10 presets for the far-site camera. You can create up to 10 presets (0-9) for the far-site camera if your system is paired with a Polycom Touch Control. These presets are saved only for the duration of the call. You might also be able to use presets that were created at the far site to control the far-site camera.

If a Polycom Touch Control is paired with a Polycom RealPresence Group system, you must use the Polycom Touch Control to create presets. Refer to Setting and Using Presets with the Polycom Touch Control on page 69.

If you use a Polycom EagleEye Director with your RealPresence Group system, you cannot use presets for voice tracking.

Setting and Using Presets with the Remote Control or Keypad

To move the camera to a stored preset:

1. If you are in a call, press **Select** on the remote control to switch between a near-site (**Your Camera**) or far-site (**Their Camera**) camera.
2. Press a number on the remote control.

To view your presets:

>> From the menu, select **Cameras > Preset**.

Icons for presets 0-9 are shown on the screen. A snapshot above a number means that a preset has been assigned to that number. A gray box means that no present has been assigned to that number.

To store a preset using the remote control:

1. If you are in a call, press **Select** to choose Your or Their camera.
2. If you selected a camera that supports electronic pan, tilt, and zoom, you can adjust the camera's position:
   - Press **Zoom** to zoom the camera out or in.
   - Press the arrow buttons on the remote control to move the camera up, down, left, or right.
3. Press and hold a number to store the preset position.

   Any existing preset stored at the number you enter is replaced.

You cannot delete a preset. Instead, overwrite an existing preset with the new camera position.

Setting and Using Presets with the Polycom Touch Control

To view presets or move the camera to a stored preset:

1. From the Home screen or Call screen, touch **Cameras**.
2. If you are in a call, touch **Near** or **Far** to select the appropriate camera control.
3. Touch **View Presets.**

4 Icons for presets 0-9 are shown on the screen.

   Solid preset icons indicate stored camera positions. Transparent icons indicate unassigned presets.

5 Touch a number to go to a saved preset.

You can also view presets in the web interface by going to **Utilities > Tools > Remote Monitoring**.

To store a preset:

1 From the Home screen or Call screen, touch **Cameras**.

2 If you are in a call, touch **Near** or **Far** to choose a near-end or far-end camera.

3 Touch **Select Camera** to choose a camera or other video source.

4 Touch **Control Camera** to move the camera to the desired position.

5 Touch **View Presets**, then touch and hold a number for 5 seconds to store the preset position. Any existing preset stored at the number you select is replaced.

A far-end camera preset can be stored only if the ability to control the far-end camera is enabled.

Experiencing High-Definition Video Conferencing

Polycom RealPresence Group systems offer the following high-definition (HD) capabilities:

- Send people or content video to the far site in HD
- Receive and display video from the far site in HD
- Display near-site video in HD
- Full-motion HD

Sending Video in High Definition

Polycom RealPresence Group systems with HD capability can send video in wide-screen, HD format. For information about frame rates for content, refer to Chapter 5, Content, on page 87.

To send video in HD format, use any model of Polycom camera that supports HD video and a Polycom RealPresence Group system capable of sending 720p or better video.

Receiving and Displaying Video in High Definition

When the far site sends HD video, Polycom RealPresence Group systems with HD capability and an HD monitor can display the video in wide-screen, HD format. The HD 720 format supported by these systems is 1280 x 720, progressive scan format (720p). Polycom RealPresence Group systems with 1080 capability can receive 1080p progressive format and can display 1080p progressive or 1080i interlaced format.

Near-site video is displayed in HD format when you use an HD video source and an HD monitor. However, near-site video is displayed in SD if the system is in an SD or lower-resolution call.

Requirements for an HD multipoint call:

- The call must be hosted by a PolycomRealPresence Group system or a conferencing platform that supports HD such as Polycom RMX 1000 or Polycom RMX 2000.
- The Polycom RealPresence Group system host must have the appropriate options installed.
- All systems in the call must support HD (720p at 30 fps) and H.264.
- The call rate must be high enough to support HD resolution, as shown in Appendix D, Call Speeds and Resolutions, on page 225.
- The call cannot be cascaded.

For more information about multipoint calls, refer to Configuring Multipoint Calling on page 93.

Using Full-Motion HD

With Polycom® RealPresence® Group Series systems, Polycom sets a higher bar for video and audio performance. Seeing participants in full 1080p 60 fps, or full-motion HD, brings video to a new level of realism. Full-motion HD provides those clear, vibrant visuals and flawless audio that are critical to replicating an “in the same room” experience.

In group collaboration, the quality of content is as important as the quality of the people on video. Content that is grainy, pixelated, or slow to update makes it hard to get the most out of your meetings. With Polycom RealPresence Group systems, you share full-motion HD people and content at the same time, which helps eliminate compromises when sharing across distances.

4

Microphones and Speakers

Connecting Audio Input

Make sure that the system is powered off before you connect devices to it.

To pick up audio from your site, you must connect a microphone to the Polycom RealPresence Group systems. Refer to your system's setup sheet for connection details.

For more information about connecting audio inputs to RealPresence Group systems, refer to Appendix A, System Back Panel Views, on page 193.

Connecting Polycom RealPresence Group System Table or Ceiling Microphone Arrays

Polycom microphone arrays contain three microphone elements for 360° coverage. You can connect multiple Polycom microphone arrays to a Polycom RealPresence Group system.

For the best audio experience, do the following:

- Place the microphone array on a hard, flat surface (table, wall, or ceiling) away from obstructions, so the sound will be directed into the microphone elements properly.
- Place the microphone array near the people closest to the monitor.
- In large conference rooms, consider using more than one microphone array. Each Polycom microphone array covers a 3-6 foot radius, depending on the noise level and acoustics in the room.

Using the Polycom EagleEye™ View and EagleEye Acoustic Microphones

Polycom EagleEye™ View and EagleEye Acoustic cameras include built-in stereo microphones. The following tips can help you achieve the best audio when using these cameras:

- Enable Polycom StereoSurround.
- Place the camera at least 1 foot away from any walls to minimize boundary effects.
- Ensure that the people speaking are no more than 7 feet away from the EagleEye View or EagleEye Acoustic camera. The maximum distance covered depends on the noise level and acoustics in the room. If you connect a Polycom microphone, Polycom SoundStation®, or Polycom SoundStructure® to the RealPresence Group system's microphone input while an EagleEye View or EagleEye Acoustic camera is connected to the system, the camera's built-in microphones are automatically disabled.
- Polycom recommends connecting other audio input devices in conference rooms larger than 12 feet by 15 feet.

Connecting a Polycom SoundStation IP 7000 Phone

When you connect a Polycom SoundStation IP 7000 conference phone to a Polycom RealPresence Group system, the conference phone becomes another way to dial audio or video calls. The conference phone also operates as a microphone, and as a speaker in audio-only calls. For more information, refer to the following documents on the Polycom web site:

- *Integration Guide for the Polycom SoundStation IP 7000 Conference Phone Connected to a Polycom RealPresence Group System in Unsupported VoIP Environments*
- *User Guide for the Polycom SoundStation IP 7000 Phone Connected to a Polycom RealPresence Group System in Unsupported VoIP Environments*

Connecting Devices to the Polycom RealPresence Group 300 and RealPresence Group 500, and RealPresence Group 550 Microphone Inputs

RealPresence Group 300 and RealPresence Group 500, and RealPresence Group 550 systems can support any of the following devices:

- Two RealPresence Group microphone arrays or two Polycom HDX microphone arrays
- One SoundStation IP 7000 phone and one RealPresence Group or Polycom HDX microphone array
- One SoundStructure C-Series device and up to four RealPresence Group or Polycom HDX microphone arrays
- Polycom EagleEye View or EagleEye Acoustic with microphones enabled

Connecting Devices to the Polycom RealPresence Group 700 Microphone Input

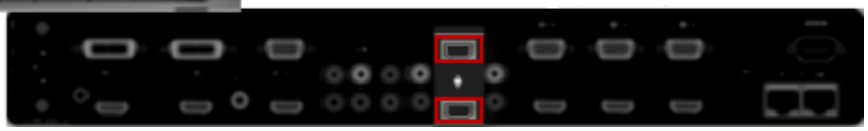
RealPresence Group 700 systems can support any of the following devices:

- Three Polycom RealPresence Group microphone arrays or three Polycom HDX microphone arrays
- One SoundStation IP 7000 phone and two RealPresence Group or Polycom HDX microphone arrays
- One SoundStructure C-Series device and up to four RealPresence Group or Polycom HDX microphone arrays
- Polycom EagleEye View or EagleEye Acoustic with microphones enabled

As shown in the following diagram, The RealPresence Group 300 and RealPresence Group 500 systems have one microphone input, while the RealPresence Group 700 system has two. You can freely configure the way you connect devices to the system, as long as you do not exceed the limits mentioned in the previous sections. If you are using the RealPresence Group 700 system, you can connect devices to either or both inputs as long as you stay within the guidelines for the total number of devices allowed for the system.

RealPresence Group 300/500 System

RealPresence Group 700 System

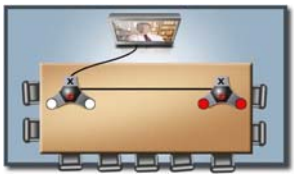
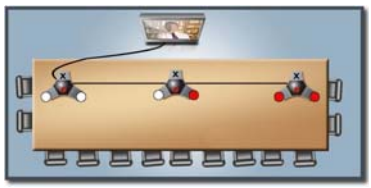


RealPresence Group 550 System

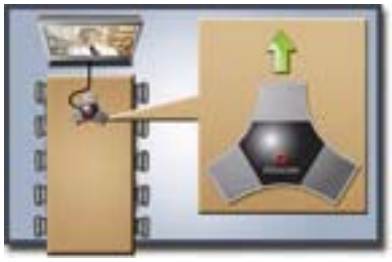
For information about cables, refer to the *Integrator's Reference Manual for the Polycom RealPresence Group Series*.

Placing Polycom Microphones to Send Stereo from Your Site

The following illustrations show microphone placement examples for different room layouts.

Number of Microphones with Stereo Enabled	Long Table	Wide Table
One	Mic 1 set to **Left+Right**	Mic 1 set to **Left+Right**
Two	Mic 1 set to **Left+Right** Mic 2 set to **Left+Right**	Mic 1 set to **Left** Mic 2 set to **Right** 
Three	Mic 1 set to **Left+Right** Mic 2 set to **Left+Right** Mic 3 set to **Left+Right**	Mic 1 set to **Left** Mic 2 set to **Left+Right** Mic 3 set to **Right** 
✕ – Not Used ○ – Left Channel ● – Right Channel		

Left and right channel assignments depend on the settings that you select on the Stereo Settings screen. If Autorotation is enabled for a microphone, the system automatically assigns active channels for the microphone. Make sure that microphones with Autorotation disabled are oriented as shown in the following illustration.



After you place the microphones, you will need to configure the system to send stereo as described in Stereo Settings on page 84.

Polycom Microphone Lights

The following table describes the behavior of the microphone lights on a Polycom table microphone.

Microphone Light	Status
Off	Not in a call
Green	In a call, mute off
Red	Mute on
Blinking Red	Configuration error occurred, such as exceeding the number of supported conference link devices
Amber	Firmware upload

Connecting Non-Polycom Microphones or a Mixer to a Polycom RealPresence Group System

You can connect non-Polycom microphones directly to audio input 1 on a Polycom RealPresence Group system, or through a line-level mixer to the AUX audio input on any Polycom RealPresence Group system. For more information about configuring these non-Polycom microphones, refer to Settings for Non-Polycom Microphones on page 86.

You can connect several microphones to a Polycom RealPresence Group system through a Polycom audio mixer. The SoundStructure C-Series mixer connects to the digital microphone connector on a Polycom RealPresence Group system, and no configuration is necessary.

Connecting a Polycom audio mixer to Polycom RealPresence Group systems provides flexibility in audio setup. For example, it allows you to provide a microphone for each call participant in a boardroom. Refer to the *Integrator's Reference Manual for the Polycom RealPresence Group Series* for connection details.

Points to note about the SoundStructure digital mixer:

- Connect a SoundStructure digital mixer using the digital microphone input on the Polycom RealPresence Group system.
- Adjusting the volume on a Polycom RealPresence Group system changes the volume of the SoundStructure digital mixer that is connected.
- The following configuration settings are not available on a Polycom RealPresence Group system when a SoundStructure digital mixer is connected: Audio input 1 (Line In), Bass, Treble, Enable Polycom Microphones, Enable MusicMode, and Enable Keyboard Noise Reduction.
- The Polycom RealPresence Group system Line Output is muted when a SoundStructure digital mixer is connected.
- All echo cancellation is performed by the SoundStructure digital mixer.

Connecting Audio Output

You must connect at least one speaker to the Polycom RealPresence Group systems in order to hear audio. You can use the speakers built into the main monitor, or you can connect an external speaker system such as the Polycom StereoSurround kit to provide more volume and richer sound in large rooms.

When you connect a SoundStation IP 7000 conference phone to a Polycom RealPresence Group system, the conference phone becomes another way to dial audio or video calls. The conference phone also operates as a microphone, and as a speaker in audio-only calls.

Refer to your system's setup sheet for connection details. Make sure that the system is powered off before you connect devices to it.

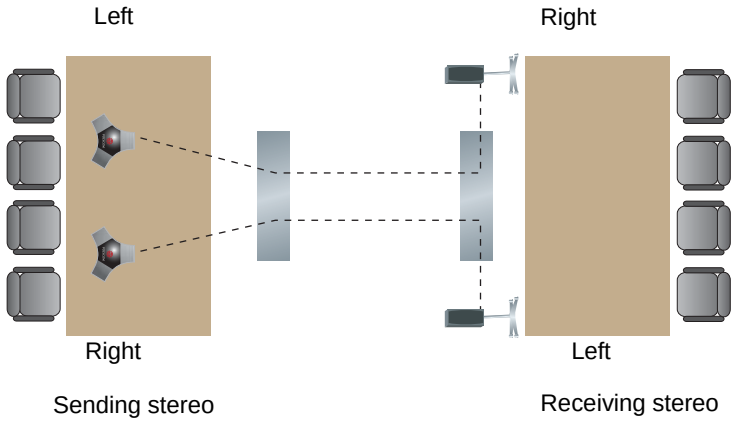
For more information about connecting speakers to RealPresence Group systems, refer to Appendix A, System Back Panel Views, on page 193.

Placing Speakers to Play Stereo from Far Sites

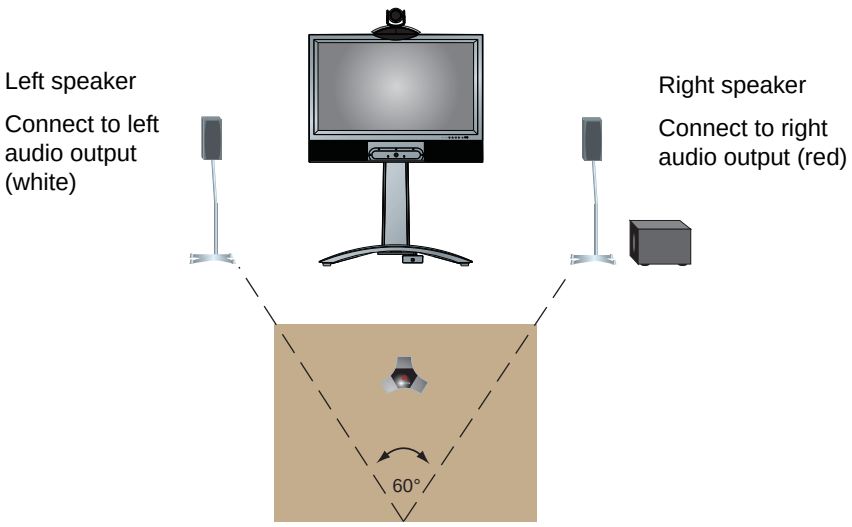
The Polycom StereoSurround kit is designed for use with Polycom RealPresence Group systems. It includes two speakers and a subwoofer.

When you set up the system for StereoSurround, the left microphone and speaker should be on the left from the local room perspective. Place the speaker connected to the audio system's right channel on the right side of the

system, and the other speaker on the left side. The system reverses the left and right channels for the far site, as shown in the following illustration. This ensures that the sound comes from the appropriate side of the room.



For best results, place the speakers about 60° apart as seen from the center of the conference table.



If you use the subwoofer in the Polycom StereoSurround kit, place it beside a wall or in a corner near the speakers.

Setting the Speaker Volume

To set the volume of an external speaker system:

1. Do one of the following:
   - In the local interface, go to **Settings > System Information > Diagnostics > Speaker Test.**
   - In the web interface, go to **Diagnostics > Audio and Video Tests > Speaker Test**.
2. Click **Start** to start the speaker test.
3. Adjust the volume of the speaker system. From the center of the room the test tone should be as loud as a person speaking loudly, about 80-90 dBA on a sound pressure level meter.
4. Click **Stop** to stop the speaker test.

Configuring Audio Settings

To configure the audio settings:

1. In the web interface, go to **Admin Settings > Audio/Video > Audio**.
2. Configure the settings for each section of the Audio screen that are described in this section of the book.

Some audio settings are unavailable when a SoundStructure digital mixer is connected to the Polycom RealPresence Group system. For more information, refer to Connecting Non-Polycom Microphones or a Mixer to a Polycom RealPresence Group System on page 77.

General Audio Settings

Setting	Description
Polycom StereoSurround	Specifies that Polycom StereoSurround is used for all calls. To send or receive stereo audio, make sure your Polycom RealPresence Group system is set up as described in Connecting Devices to the Polycom RealPresence Group 300 and RealPresence Group 500, and RealPresence Group 550 Microphone Inputs on page 75 and Connecting Audio Output on page 78.
Sound Effects Volume	Sets the volume level of the ring tone and user alert tones.
Ringtone	Specifies the ring tone used for incoming calls.
User Alert Tones	Specifies the tone used for user alerts.
Mute Auto Answer Calls	Specifies whether to mute incoming calls. Incoming calls are muted by default until you press the mute button on the microphone or on the remote control.
Enable MusicMode	Specifies whether the system transmits audio using a configuration that best reproduces live music picked up by microphones. **Note:** Noise suppression, automatic gain control, and keyboard noise reduction are disabled when this setting is enabled.
Enable Keyboard Noise Reduction	Specifies whether the system mutes audio from any site when keyboard tapping sounds are detected but no one is talking at that site. **Note:** MusicMode is disabled when this setting is enabled. Keyboard Noise Reduction is not available if an audio mixer is used.

Audio Input

The RealPresence Group 300 system has no audio input settings and the settings for the RealPresence Group 500 and RealPresence Group 700 systems are quite different. The RealPresence Group 550 systems have settings for RCA line in, 3.5mm input, and HDMI input. The following tables describe each.

RealPresence Group 500 and RealPresence Group 550 Audio Input Settings

Setting	Description
Type	Displays the RCA (Line) audio input.
Audio Input Level	Sets the audio input level.
Audio Meter (not labeled)	Displays the audio level for the RCA audio input port, left and right channels.
Type	Displays the 3.5mm connector for line-level stereo audio input.
Audio Input Level	Sets the 3.5 mm audio input level.
Use Input for Microphone	Specifies use of the 3.5mm input on the RealPresence Group 500 system as either video-associated input (when the setting is not enabled) or as an input for external equipment (when enabled) such as external mixers like the Polycom Vortex. When associated with the video input, the audio input is active only when the associated video input is selected (VGA/HD15). This audio is mixed into the local audio and sent to the far end. Functionality does not change whether the video input is defined as people or content. When used as an audio input for external equipment, the audio is mixed with the input on the Polycom microphone array input and sent to the far end. This input will be muted when the local mute is activated. This option is not available to the RealPresence Group 550 systems.
Echo Canceller	Specifies whether to use the system's built-in echo canceller. This setting is available only when the **Use Input for Microphone** setting is enabled. This option is not available to the RealPresence Group 550 systems.
Audio Meter (not labeled)	Displays the audio level for the 3.5 mm input port, left and right channels.
Type	Displays embedded audio from the HDMI connector.
Audio Input Level	Sets the audio input level.
Audio Meter (not labeled)	Displays the audio level for the HDMI input port, left and right channels.

RealPresence Group 700 Audio Input Settings

Setting	Description
Type	Displays **Line** (dual RCA, auxiliary audio input).
Audio Input Level	Sets the audio input level.
Audio Meter (not labeled)	Displays the audio level of the line input, left and right channels.
Type	Displays **3.5 mm** (line-level stereo audio input, associated with HD15/VGA video input 3).
Audio Input Level	Sets the audio input level.
Audio Meter (not labeled)	Displays the audio level of the line input, left and right channels.
Type	Displays **HDMI 1** (HDMI connector embedded audio input, associated with video input 1).
Audio Input Level	Sets the audio input level.
Audio Meter (not labeled)	Displays the audio level of the line input, left and right channels.
Type	Displays **HDMI 2** (HDMI connector embedded audio input, associated with video input 2).
Audio Input Level	Sets the audio input level.
Audio Meter (not labeled)	Displays the audio level of the line input, left and right channels.
Type	Displays **HDMI 3** (HDMI connector embedded audio input, associated with video input 3).
Audio Input Level	Sets the audio input level.
Audio Meter (not labeled)	Displays the audio level of the line input, left and right channels.
Type	Displays **Component** (dual RCA, associated with component video input 4).
Audio Input Level	Sets the audio input level.
Audio Meter (not labeled)	Displays the audio level of the line input, left and right channels.

Audio Output

Setting	Description
Master Audio Volume	Sets the main audio output volume level going to the speakers.
Bass	Sets the volume level for the low frequencies without changing the master audio volume.
Treble	Sets the volume level for the high frequencies without changing the master audio volume.
Type	Display the current audio output type.
Output Mode	Specifies whether volume for a device connected to the line out connectors is variable or fixed. • **Variable**—Allows users to set the volume with the remote control. • **Fixed**—Sets the volume to the Audio Level specified in the system interface.
Line Output Level	Displays the output level meter for the current audio output type.

Stereo Settings

To send or receive stereo audio, make sure your Polycom RealPresence Group system equipment is set up as described in Connecting Devices to the Polycom RealPresence Group 300 and RealPresence Group 500, and RealPresence Group 550 Microphone Inputs on page 75 and Connecting Audio Output on page 78. Then configure the system to use Polycom StereoSurround, test the system configuration, and place a test call.

If you are in a call with a far site that is sending audio in stereo mode, you can receive in stereo. In multipoint calls where some sites can send and receive stereo and some sites cannot, any site that is set up to send or receive stereo will be able to do so.

Some audio settings are unavailable when a SoundStructure digital mixer is connected to the Polycom RealPresence Group system

Setting	Description
Polycom Microphone Type	Displays the type of Polycom microphone being used.
Stereo	Positions the audio input within the left and right channels. **Left** sends all of the audio to the left channel. **Right** sends all of the audio to the right channel. For Polycom digital microphone and ceiling microphone arrays, **Left+Right** sends audio from one microphone element to the left channel and audio from a second element to the right channel.
Autorotation	Specifies whether autorotation is used for Polycom microphones. If this feature is enabled, the system automatically assigns left and right channels for the microphone based on sound it senses from the left and right speakers. **Note:** This feature does not work when headphones are used.
Audio Meter (dB meter)	Lets you see the peak input signal level for Polycom microphones.

Audio Meters

The audio meters in the user interface allow you to identify left and right channels. The meters also indicate peak signal levels. Set signal levels so that you see peaks between +3 dB and +7 dB with normal speech and program material. Occasional peaks of +12 dB to +16 dB with loud transient noises are acceptable. If you see +20 on the audio meter, the audio signal is 0 dBFS and the audio might be distorted.

Testing StereoSurround

After you configure the system to use Polycom StereoSurround, test the system configuration and place a test call.

To test your stereo configuration:

1. Make sure the microphones are positioned correctly.

   Refer to Placing Polycom Microphones to Send Stereo from Your Site on page 76.

2. In the web interface, go to **Admin Settings >Audio/Video > Audio.**
3. Gently blow on the left leg and right leg of each Polycom microphone while watching the bar meters to identify the left and right inputs.

4 Test the speakers to check volume and verify that audio cables are connected. If the system is in a call, the far site hears the tone.

Exchange the right and left speakers if they are reversed.

Adjust the volume control on your external audio amplifier so that the test tone sounds as loud as a person speaking in the room. If you use a Sound Pressure Level (SPL) meter, it should measure about 80-90 dBA in the middle of the room.

To make a test call in stereo using the remote control:

>> Enter `stereo.polycom.com` in the dialing field and press on the remote control.

Settings for Non-Polycom Microphones

You can configure a Polycom RealPresence Group system to use with non-Polycom microphones. This feature is not available to the RealPresence Group 550 systems.

To configure a Polycom RealPresence Group system to use devices connected directly to audio input 1:

1 In the web interface, go to **Admin Settings > Audio/Video > Audio > Audio Input.**

2 Do the following**:**

- **a** Enable **Use 3.5 mm Input for Microphone**.
- **b** Enable **Echo Canceller**.
- **c** Adjust the **3.5 mm Level** if necessary.
- **d** Speak into the microphones that are connected to the audio line inputs. The audio meter should peak at about 5 dB for normal speech.

5

Content

You can present content during calls when you use sources such as the following:

- A VCR or DVD player connected directly to a video input on a Polycom RealPresence Group system
- People+Content IP installed on a computer, with any Polycom RealPresence Group system
- A computer connected directly to a Polycom RealPresence Group system or a Polycom Touch Control
- A USB drive connected to a Polycom Touch Control

Polycom RealPresence Group systems achieve maximum content frame rate of 30 fps for 1080p with a 1080p Resolution option key installed, and 60 fps for 720p. If you use **Content** as the **Quality Preference** in your network IP settings, you can achieve a content frame rate of 60 fps for 1080p with the 1080p Resolution option key installed.

For more information about sharing content during a call, refer to the *User's Guide for the Polycom RealPresence Group Series*.

Configuring VCR/DVD Player Settings

With a Polycom RealPresence Group 500 system, you can connect a VCR or DVD player to an HDMI or VGA input to play content.

With a Polycom RealPresence Group 550 system, you can connect a VCR or DVD player to an HDMI or VGA input to play content.

With a Polycom RealPresence Group 700 system, you can also connect a VCR or DVD player to the system's VCR input to play videotapes or DVDs in calls.

Using a VCR or DVD player with a RealPresence Group 300 system is not a viable option.

Playing a Videotape or DVD

The VCR/DVD inputs are active when you select the camera source configured as VCR. The microphone inputs remain active while the VCR or DVD player is playing. Call participants might want to mute the microphones while playing videotapes or DVDs.

To configure VCR/DVD audio settings for playing a videotape or DVD:

1. In the web interface, go to **Admin Settings > Audio/Video > Audio > Audio Input.**
2. Set the audio input level of your audio input (3.5 mm or HDMI) for playback volume of the VCR/DVD player relative to other audio from the system.

Connecting Computers to Polycom RealPresence Group Systems

You can connect a computer directly to a Polycom RealPresence Group system. When you do this, other call participants can see everything that you see on your computer.

When you connect to video and audio from your computer, the audio is muted unless the computer is selected as a video source.

For more information about connecting computers as content video sources for Polycom RealPresence Group systems, refer to Connecting Cameras on page 56. Refer to your system's setup sheet for connection details.

Configuring Content Sharing

To configure the content display:

1. In the web interface, go to **Admin Settings > Audio/Video > Video Inputs** and select the input you want to configure for Content.
2. For the **Display as** setting, select **Content** for the input that will display content.

For the RealPresence Group 550 systems, you can only set **Input 3** for **Content**.

When you connect a content-sharing device such as a laptop to the input, the content starts displaying. If the content-sharing device is already connected, you must manually show the content from the local interface. For more information about showing content, refer to the *User's Guide for the Polycom RealPresence Group Series*.

As long as the default values for other settings in the system have not changed, you are ready to share content on your RealPresence Group system. However, if you disabled the H.239 protocol for some reason, you must enable the program for content sharing by following these steps:

1. In the web interface, go to **Admin Settings > Network > Dialing Preference.**
2. Enable **H.239**.

You cannot enable or disable H.239 while in a call.

If the audio level of the call using content sharing needs to be adjusted, follow these steps to change the level:

1. In the web interface, go to **Admin Settings > Audio/Video > Audio > Audio Input.**
2. Set the **Audio Input Level**.

Configuring Content Display with People+Content IP

People+Content IP enables a presenter to show content from a computer to other sites in a video conference using only an IP network connection. The presenter can show PowerPoint® slides, video clips, spreadsheets, or any other type of content from a computer. People+Content IP supports any computer desktop resolution with color set to 16-bit or higher.

Before a presenter can use a computer to show content with People+Content IP, you need to:

- Download the People+Content IP software application from the Polycom web site to the computer or computers that the presenter will use to show content.

  You don't need to change the computer resolutions and you don't need special cables or hardware, but each computer must meet these requirements:

  - Operating System: Windows 7 or 8
  - Minimum computer: 500 MHz Pentium® III (or equivalent); 256 MB memory
    Recommended computer: 1 GHz Pentium III (or equivalent); 512 MB memory

- Connect the computer or computers to the IP network.

To install People+Content IP on a computer:

1. On a computer, open a web browser and go to the Polycom web site at www.polycom.com/ppcip.
2. Download and install the People+Content IP software.

If the Polycom RealPresence Group system is paired with a Polycom Touch Control, People+Content IP does not need to be installed. If you connect the PC to the USB connection on the underside of the Polycom Touch Control, a version of People+Content IP launches automatically.

6

Placing and Answering Calls

Configuring System Settings

The System Settings screens provide access to high-level options for the entire system. For convenience, some of the User Settings options are repeated on these screens.

To configure a system name:

1 In the web interface, go to **Admin Settings > General Settings > System Settings > System Name.**

The first character of a System Name must be a letter or a number. The System Name cannot begin with the dollar sign ($) or underscore (_) character.

2 In the **System Name** field, enter a name and click **Save**.

This name appears on the screen for the far site when you are making calls.

Configuring Call Settings

The call settings screen allows you to determine which settings are available to users when they place and answer calls in both the web interface and the local interface.

To configure call settings:

1 In the web interface, go to **Admin Settings > General Settings > System Settings > Call Settings.**

2 Configure these settings.

Setting	Description
Maximum Time in Call	Enter the maximum number of hours allowed for call length. When that time has expired, you see a message asking you if you want to hang up or stay in the call. If you do not answer within one minute, the call automatically disconnects. If you choose to stay in the call at this time, you will not be prompted again. Selecting **Off** removes any limit. This setting also applies when you are viewing the Near video screen or showing content, even if you are not in a call. If the maximum time is reached while viewing Near video, the system automatically returns to the Home screen. If content is being shown, the content stops.
Auto Answer Point-to-Point Video	Sets the answer mode for calls with one site. This setting specifies whether to answer incoming point-to-point calls automatically, force manual answering of them, or reject them.
Auto Answer Multipoint Video	Sets the answer mode for calls with two or more other sites. This setting specifies whether to answer incoming multipoint calls automatically, force manual answering of them, or reject them.
Display Icons in a Call	Specifies whether to display all on-screen graphics, including icons and help text, during calls.

3 To save your changes, click **Save**.

Setting the Call Answering Mode

To set the call answering mode:

1. In the web interface, go to **Admin Settings > General Settings > System Settings > Call Settings.**
2. Select **Auto Answer Point-to-Point Video** to set the answer mode for calls with one site, or select **Auto Answer Multipoint Video** to set the mode for calls with two or more other sites, and then select one of the following:
   - **Yes** – Answers calls automatically.
   - **No** – Enables you to answer calls manually.
   - **Do Not Disturb** – disables incoming calls from being processed.

Configuring Multipoint Calling

You can use your Polycom RealPresence Group system to participate in multipoint conferences. Multipoint conferences include multiple video sites and can also include H.323 audio-only or SIP audio-only sites. All H.323 audio-only and SIP audio-only connections count toward the number of sites in a call. Multipoint calls require a multipoint conferencing unit (MCU) or a hosting system. Depending on the system's configuration, Polycom RealPresence Group systems can host multipoint calls.

You cannot configure multipoint calls without purchasing and installing a Multipoint Video Conferencing option key code.

Entering a Multipoint Option Key

Depending on your Polycom RealPresence Group system model, you might need to enter a multipoint option key to enable multipoint calling. For information about purchasing a multipoint call option, please contact your Polycom distributor.

To enter the multipoint option key:

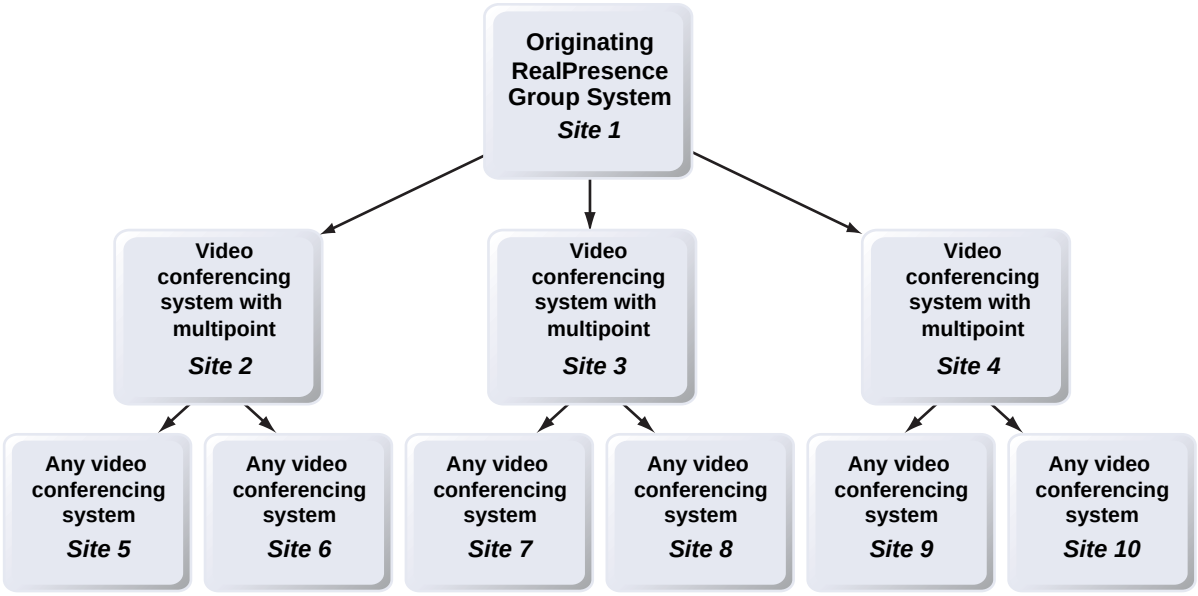
1. In the web interface, go to **Admin Settings > General Settings > Options.**
2. In the **Key** field, enter the Multipoint Video Conferencing option key.

3 Click **Save**.

The MP option key cannot be used with Polycom RealPresence Group 300 systems.

Including Multiple Sites in a Cascaded Call

You can include multiple sites in a cascaded call if the sites you call have internal multipoint capability. The following diagram shows how to do this.



To place a cascaded call:

1 Create and call a group in the directory, or place calls one at a time to several other sites.

2 Ask each far site to call additional sites. Along with these additional sites, each far site in the original multipoint call can add one audio-only connection.

Points to note about cascaded calls:

- H.239 is not supported in cascaded calls.
- Cascaded multipoint is not supported in SIP calls.
- HD and SD multipoint are not supported when the Polycom RealPresence Group system hosts a cascaded call.
- You cannot change local layout in cascaded calls.
- The encryption padlock icon might not accurately indicate whether a cascaded call is encrypted.

Managing Directories with the Polycom RealPresence Group System Web Interface

Directory Group Overview

Having groups in the directory can help users find calling information quickly and easily. Polycom RealPresence Group systems support global groups and Favorites groups.

Polycom RealPresence Group systems support up to 2,000 Favorites that users create within Favorites. They can also support one of the following:

- Up to 200 additional contacts with presence, which appear in Favorites, when registered with Microsoft Lync Server 2010 or 2013.
- Up to 200 additional contacts with presence, which appear in Favorites, when registered with Polycom CMA.
- Up to 4,000 contacts from a Polycom GDS server.
- An unlimited number of contacts when the RealPresence Group system is registered with Microsoft Lync Server 2010 or 2013.

Polycom RealPresence Group systems support up to 200 Favorites groups that users create within Favorites. If the system is connected to a global directory server, it can also support one of the following:

- Up to 64 additional groups from the Microsoft Lync Server, which appear in the Favorites group.
- Up to 200 additional distribution groups from Polycom CMA, which appear in the Global Directory group.

Global Directory Entries

Global directory entries are assigned to a global group with the name that you specify in the Directory Server configuration. Up to 200 search results can be displayed at a time from an LDAP or Microsoft global directory. Users cannot edit or delete global directory entries or global directory groups.

Managing Favorites

Local interface users can select **Contacts** from the menu to view favorites and the directory.

Web interface users can add favorites from the directory, create new favorite contacts, and create favorite groups.

You perform the following tasks on the **Home > Manage Favorites** screen.

To create a new Favorites contact

1. To create a favorite contact not in the directory list, click **Create New Favorite**.
2. Enter the contact call information and click **Save**.

To create a Favorites group

1. Click **Create New Group**.
2. Enter a **Display Name** for the group and click **Save**.

   A success message is displayed.
3. To add contacts to the group, click **Add Contacts** on the success message.
4. Enter a contact name in the search box and click **Search**.
5. In the entry you want to add to the group, click **Add**.
6. Repeat the above steps to add more contacts to the group.
7. Click **Done**.

To edit a Favorites group

1. Find the group name in the list of contacts.
2. Next to the group contact name, click **Edit Group**.

   Do one of the following:

   - To add contacts to the group, click **Add From Directory**, enter a contact name, click **Search,** and then **Add** to add a contact.
   - To remove contacts from the group, select a contact name and click **Remove**.

3 Repeat the above steps to continue adding or removing contacts.

4 Click **Done.**

To delete a Favorites contact or group

1 In the search box, type a contact name and click **Search**.

2 In the contact name you want to delete, click **Delete**.

Types of Favorites Contacts

Favorites contains the types of Contacts shown in the following table.

Directory Server Registration	Types of Contacts	Presence State Displayed
Polycom GDS	• Directory entries created locally by the user.	Unknown
	• References to Polycom GDS entries added to Favorites by the user. These entries are available only if the system is successfully registered with Polycom GDS. Users can delete these entries from Favorites. Users can copy these entries to other Favorites and remove them from those groups. Users cannot edit these entries.	Online/Offline
LDAP with H.350 or Active Directory	• Directory entries created locally by the user • References to LDAP directory entries added to Favorites by the user. These entries are available only if the system can successfully access the LDAP/Active Directory server. Users can delete these entries from Favorites. Users can copy these entries to other Favorites and remove them from those groups. Users cannot edit these entries.	Unknown

Directory Server Registration	Types of Contacts	Presence State Displayed
LDAP by a Polycom CMA System	• Directory entries created locally by the user. • References to LDAP directory entries added to Favorites by the user. These entries are available only if the system can successfully access Polycom CMA. Users can delete these entries from Favorites. Users can copy these entries to other Favorites and remove them from those groups. Users cannot edit these entries.	Unknown
	• LDAP directory entries saved as Favorites by the user and stored with the presence service. Users can delete these entries from Favorites. Users can copy these entries to other Favorites and remove them from those groups. Users cannot edit these entries.	Real-time presence
Microsoft	• Microsoft Lync Server directory entries saved as Contacts by the user in Office Communicator and stored on the Microsoft Lync Server. Users must create their contact lists using Microsoft Office Communicator on a computer. Users cannot edit or delete these entries from Favorites using the Polycom RealPresence Group system. Users can copy these entries to other Favorites and remove them from those groups.	Real-time presence

Connecting to Microsoft Exchange Server Calendaring Service

Polycom RealPresence Group systems can connect to Microsoft Exchange Server 2010 or 2013 and retrieve calendar information. Connecting to a calendaring service allows the system to:

- Display the day's scheduled meetings, along with details about each.
- Hide or show details about meetings marked Private, depending on the configuration of the system.
- Display a meeting reminder before each scheduled meeting, along with a reminder tone.

If the meeting was created using the Polycom Conferencing Add-In for Microsoft Outlook, the RealPresence Group system can:

- Identify video-enabled meetings with a icon displayed on the system calendar.
- Let users join the meeting without knowing the connection details.

To configure Calendaring properties:

1. In the web interface, go to **Admin Settings > Servers > Calendaring Service**.
2. Configure these settings.

Setting	Description
Enable Calendaring Service	Enables the system to connect to the Microsoft Exchange Server 2010 or 2013 or and retrieve calendar information.
Microsoft Exchange Server	Specifies the Fully Qualified Domain Name (FQDN) of the Microsoft Exchange Client Access Server. If your organization has multiple Client Access Servers behind a network load balancer, this is the FQDN of the server's Virtual IP Address. If required, an IP address can be used instead of an FQDN, but Polycom recommends using the same FQDN that is used for Outlook clients.
Domain	Specifies the domain for registering to the Microsoft Exchange Server 2010 or 2013, in either NETBIOS or DNS notation, for example, either `company.local` or `COMPANY`.
User Name	Specifies the user name for registering to the Microsoft Exchange Server 2010 or 2013, with no domain information included. This can be the system's name or an individual's name.
Password	Specifies the system's password for registering with the Microsoft Exchange Server 2010 or 2013.

Setting	Description
Email	Specifies the Outlook mailbox this system should monitor for calendar information. This should match the Primary SMTP Address for the account in Microsoft Exchange Server 2010 or 2013, which is displayed as the value of the mail attribute in the account properties.
Play Reminder Tone When Not in a Call	Specifies whether to play a sound along with the text reminder when the system is not in a call.
Show Information for Meetings Set to Private	Specifies whether to display details about meetings marked private.

Calling from the Calendar

If your RealPresence Group system is configured to connect to the Microsoft Exchange Server, and the Polycom Conferencing for Microsoft Outlook add-in is installed at your site, you can join a scheduled meeting from the Calendar screen. If the home screen does not display calendar information, the system is not registered with the Microsoft Exchange Server. If no meetings are scheduled, a "No Meetings Today" message is displayed.

To join a scheduled meeting from the Home screen:

1. With your remote, select a meeting on the Home screen.
2. Select **Join** to call into the meeting. If **Join** is not displayed, you must get and install the Polycom Conferencing Add-In for Microsoft Outlook.

For information about displaying the Calendar button on the Home screen, refer to Customizing the Home Screen on page 16. For more information about using Polycom Conferencing for Microsoft Outlook, refer to the *User's Guide for the Polycom RealPresence Group Series*. For more information about setting up Microsoft Exchange Server 2010 or 2013 accounts to use the calendaring service, refer to the *Polycom Unified Communications Deployment Guide for Microsoft Environments* available on the Polycom website.

Using the Web Interface Home Page

When you click the **Home** link on the web interface, the default view shows you the following widgets:

- Place a Call
- Speed Dial
- Recent Calls

- Support Documents

For information on configuring Home screen settings for the local interface, refer to Customizing the Home Screen on page 16.

Place a Call

In the **Place a Call** section on the web interface Home page, you can place a call two different ways:

To call a Favorites contact

1. In the **Contacts** section, enter a name and click **Search**.
2. Select a contact name and click **Call**.

For information about editing Favorites contacts, refer to Managing Favorites on page 96.

To place a call manually

1. Click **Manual Dial**.
2. Enter the number.
3. Click **Call**.

The call is placed according to the default settings you selected in **Admin Settings > Network > Dialing Preferences**. You can select options other than the defaults in the two drop-down lists below the text entry field.

To require a password, select **Meeting Password** and enter a password in the field that displays below the check box.

Speed Dial

On the web interface Home page, you can call Speed Dial contacts and can edit the Speed Dial contact list.

To call speed dial contacts

>> In the Speed Dial section, select a contact from the list and click **Call**.

To add speed dial contacts

1. In the **Speed Dial** section, click **Edit**.
2. Enter a contact name and click **Search**.
3. In the contact you want to add, click **Add**.

4 To save your changes, click **Done**.

To remove speed dial contacts

1 In the **Speed Dial** section, click **Edit**.

2 In the contact you want to delete, click **Remove**.

3 To save your changes, click **Done**.

Recent Calls

On the web interface Home page, you can place calls to Recent Call contacts.

You can also configure a Recent Calls list to display on the RealPresence Group system Home screen on both the web and local interfaces. The list includes the following information:

- Site name or number
- Whether call was placed or received

To dial a recent call from the web interface:

>> On the web interface Home page's **Recent Calls** section, do one of the following:

— Find an entry and click the **Call** link next to the entry.

— Click **More** to view a list of calls with more details, then select an entry and click **Call**.

To configure Recent Calls in the web interface:

1 Go to **Admin Settings > General Settings > System Settings > Recent Calls**.

2 To enable a Recent Calls list, configure these settings.

Setting	Description
Call Detail Report	Specifies whether to collect call data for the Call Detail Report. When selected, information about calls can be viewed through the Polycom RealPresence Group system web interface and downloaded as a `.csv` file. When this setting is not selected, the system stops writing calls to the report.

Setting	Description
Enable Recent Calls	Specifies whether to show Recent Calls on the local and web interfaces.
Maximum Number to Display	Specifies the maximum number of calls to display in the Recent Calls list.

3 To start a new list of recent calls, click **Clear Recent Calls**.

4 Click **Save**.

If you need more details about calls, you can view or download the Call Detail Report (CDR) from the Polycom RealPresence Group system web interface. For more information about the CDR, refer to Call Detail Report (CDR) on page 180.

To view the Recent Calls screen using the Polycom Touch Control:

1 If the Polycom RealPresence Group system is paired with the Polycom Touch Control, touch **Place a Call**.

2 Touch **Recent Calls**.

3 Touch **Info** next to the entry you want to view.

Support Documents

To open a support document

>> On the web interface's Home page, click a document link from the **Support Documents** list.

To view a list of all available documents, click **View All**.

Placing Calls in Kiosk Mode

In the local interface, Kiosk Mode simplifies the Home screen by displaying only speed dial entries and calendar meetings (if enabled). In Kiosk Mode, therefore, you can call speed dial numbers, join calendar meetings, and answer calls.

You must create your speed dial numbers before you use Kiosk Mode.

Points to Note about Kiosk Mode:

Kiosk Mode is disabled by default. If Kiosk Mode is enabled:

- The Home screen menu, Out of Call menu, and other icons are disabled.
- Alerts bring the local interface out of Kiosk Mode until you clear the alerts.
- You can still use the remote to adjust the volume, control the camera, and mute/unmute the microphone when in calls.
- You can bring up the In a Call menu by pressing Menu on the remote during the call.

To enable Kiosk Mode:

1. In the web interface, go to **Manage Favorites > Create Favorite** and create one or more Favorites.
2. On the web interface's Home screen, select **Edit** next to **Speed Dial**, then search for and add Favorites to Speed Dial.
3. Go to **Admin Settings > General Settings > Home Screen Settings > Speed Dial**.
4. Select **Enable Speed Dial** and then click **Save**.
5. Go to **Kiosk Mode**, then select **Enable Kiosk Mode** and click **Save**.

For information using Kiosk Mode, refer to the *User's Guide for the Polycom RealPresence Group Series and the Polycom Touch Control*.

7

Security

To configure your RealPresence Group system using the system web interface, you must use Internet Explorer version 9 on a Windows computer or Apple Safari on a Mac computer using OS X. Configure your browser to allow cookies.

To go to the web interface:

>> Open a web browser and enter the IP address of the RealPresence Group system using the `https://IPaddress` (for example, `https://10.11.12.13`).

For more information about using the web interface, refer to Accessing the Web Interface on page 139.

The HTTPS protocol ensures that the configuration of all login information (such as user names and passwords) is transmitted using an encrypted channel, including those user names and passwords used to communicate with third-party systems on your network. Using HTTPS severely limits the ability of anyone on the network to discover these credentials. For this reason, all attempts to use the RealPresence Group Series web interface via HTTP are redirected to the HTTPS interface.

You can find security options and passwords in this part of the interface:

- In the local interface, go to **Settings > Administration > Security**.

  The local interface has general, password, and remote access settings.

- In the web interface, go to **Admin Settings > Security**.

  The web interface has global and local settings.

Settings are under different sections of the security interfaces. Not all systems show all of the options, and many settings in the web interface are unavailable in the local interface.

Configuring Security Profiles

RealPresence Group system security profiles provide varying levels of secure access to your RealPresence Group system. The security profile your RealPresence Group system uses provides the basis for secure access within the system and determines how users can operate the system.

The security profile is selected during system setup with the setup wizard, but this setting is configurable through the web interface's Admin Settings. The default values and ability to change some RealPresence Group settings are affected by which security profile your system uses. Refer to the tables in Appendix C, Security Profile Tables, on page 205 to see how these settings are affected for each security profile.

Consider each security profile as a set of default values for all configuration settings that affect product security that achieves some level of base product security. You can choose from four profiles—Maximum, High, Medium and Low. Each profile provides a basic security posture, ranging from the most secure to the least secure, which allows you to select a level of security that is appropriate for the deployment of the system in your environment.

Because you can change most of the individual configuration settings regardless of the security profile you chose, Polycom recommends that you select the profile that is closest to the level of security you want in your environment and then customize the settings from there as needed. In the higher profiles, however, some settings are either not changeable at all or have restricted ranges of values. For specific configuration information, refer to each profile's settings in Appendix C, Security Profile Tables, on page 205.

To view or change a security profile:

1. In the web interface, go to **Admin Settings > Security > Global Security**.
2. Determine which of the following **Security Profile** settings your system uses.

Setting	Description
Maximum	Configures the system to be compliant with U.S. DoD security requirements. Some configuration settings are made read-only in this profile; other settings have restricted ranges of values. This profile represents the highest level of security.
High	Configures the system with most security controls enabled, but does not mandate the use of some controls that are mandated in Maximum profile. Some configuration settings are not changeable in this profile; other settings have restricted ranges of values. This profile is most appropriate for enterprise deployments that demand high security.

Setting	Description
Medium	Configures the system with some of the basic security controls enabled, but not all. Most settings are changeable in this profile.
Low	Configures the system with no mandated security controls, although all controls can be enabled as needed. This is the default profile.

3 To change the profile setting, select the **Security Profile** you want to use. You can increase or decrease the level of security.

4 Follow the prompts in the Security Profile Change wizard.

Managing System Access

External Authentication

Polycom RealPresence Group systems support two roles for accessing the system, an admin role and a user role. Admins can perform administrator activities such as changing configuration, as well as user activities such as placing and answering calls. Users can perform only user-type activities.

Polycom RealPresence Group systems provide two local accounts, one for the user role (by default named `user`) and one for the admin role (by default named `admin`). The IDs and passwords for these local accounts are stored on the RealPresence Group system itself.

An administrator can configure RealPresence Group systems to grant access using network accounts that are authenticated through an Active Directory (AD) server such as the Microsoft Active Directory server. In this case, the account information is stored on the AD server and not on the RealPresence Group system. The AD administrator assigns accounts to AD groups, one for RealPresence Group system admin access and one for user access. For this reason, external authentication is also referred to as Active Directory authentication.

The RealPresence Group system administrator configures the external authentication settings on the RealPresence Group system to specify the address of an AD Server for authenticating user logins, AD group for user access, and AD group for admin access on the RealPresence Group system. The RealPresence Group system can map only one Active Directory group to a given role.

Users can enter their network account credentials to access the system on the following interfaces:

- Web interface (admin access only)

- Local interface (`user` and `admin` role accounts when **Require Login for System Access** is enabled; `admin` accounts when admin-only areas of the local interface are accessed)

Point to Note about External Authentication:

When External Authentication is enabled in PKI environments where **Always Validate Peer Certificates from Server** is enabled on the RealPresence Group system, make sure to configure the Active Directory Server Address on the RealPresence Group endpoint using the address information that is in the Active Directory Server's identity certificate. This is important in allowing the RealPresence Group system to successfully validate the Active Directory Server's identity certificate.

As an example, if the Active Directory Server's identity certificate contains its DNS name only, and no specific IP address, configuring the Active Directory Server Address on the RealPresence Group system using the server's IP address will result in certificate validation failure, and consequently authentication failure. The RealPresence Group system configuration would have to specify the server by DNS name in this case to successfully match the server certificate data.

RealPresence Group systems support Active Directory on Microsoft Windows Server version 2008 R2 and Microsoft Windows Server 2012.

The RealPresence Group system local user account is disabled when **Enable Active Directory External Authentication** is enabled. The admin account is active and usable, however.

To enable external authentication:

1. In the web interface, go to **Admin Settings > Security > Global Security > Authentication**.

2 Configure these settings on the Authentication page.

Setting	Description
Enable Active Directory External Authentication	Specifies whether to authenticate users through the Active Directory server. When Active Directory authentication is enabled, users are allowed to log in with their network account credentials, using this format: `domain\user` With this format, users can have accounts on multiple domains.
Active Directory Server Address	Specifies the DNS fully qualified domain name (FQDN) or IP address of the Active Directory server (ADS). If you are using subdomains, append port number 3268 as follows: `ad.domain.com:3268` **Note:** RealPresence Group systems can use the RealPresence Resource Manager system as an ADS. If one is deployed in your environment, enter its address here. Otherwise, enter the address of an ADS.
Active Directory Admin Group	Specifies the Active Directory group whose members should have admin access to the RealPresence Group system. This name must exactly match the name in the ADS for authentication to succeed.
Active Directory User Group	Specifies the Active Directory group whose members should have user access to the RealPresence Group system. This name must exactly match the name in the ADS for authentication to succeed.

If external authentication is not active after completing these steps, go to **Admin Settings** > **Network** > **LAN Properties** > **LAN Options** and ensure that the **Domain Name** setting contains the name of your Active Directory domain.

When the Polycom RealPresence Group system is paired with a Polycom Touch Control, only the local Polycom RealPresence Group system admin credentials can be used to pair with the RealPresence Group system.

Login and Credentials

Login credentials are user IDs and passwords that identify the user and define the user's ability to access the Polycom RealPresence Group system.

Local Access

To configure local access to the system:

1. Do one of the following:
   - In the local interface, go to **Settings > Administration > Security > Passwords**.
   - In the web interface, go to **Admin Settings > Security > Local Accounts > Login Credentials**.
2. Configure the following settings. The order in which the settings are displayed differs between the interfaces.

Setting	Description
Admin ID	Specifies the ID for the administrator account. The default Admin ID is `admin`. Admin IDs are not case sensitive.
Admin Room Password	Specifies the password for the local administrator account used when logging in to the system locally. When this password is set, you must enter it to configure the system Admin Settings using the remote control. The password cannot contain spaces or be more than 40 characters. Passwords are case sensitive. The default Admin Room Password is the 14-digit system serial number from the **System Information** screen or the back of the system.
Use Room Password for Remote Access	Specifies whether the room password used for local login is also used for the remote login. When this setting is disabled, the remote access password settings are displayed.
Admin Remote Access Password	Specifies the password for the local administrator account used when logging in to the system remotely using the web interface or a telnet session. When this password is set, you must enter it to update the software or manage the system from a computer. The password cannot contain spaces or more than 40 characters.

Setting	Description
Require User Login for System Access	Specifies whether the system automatically prompts users to log in when the system comes out of sleep mode or completes the startup process. Enabling this setting requires a login to use the local interface. You can enable this setting at any time.
User ID	Specifies the ID for the user account. The default User ID is `user`. User IDs are not case sensitive.
User Room Password	Specifies the password for the local user account used when logging in to the system locally. The password cannot contain spaces or more than 40 characters. Passwords are case sensitive.
User Remote Access Password	Specifies the password for the local user account used when logging in to the system remotely. The password cannot contain spaces or more than 40 characters. Passwords are case sensitive.

When you configure the RealPresence Group system to use the **Maximum** security profile, the system will force you to change the **Admin ID** and **User ID** from their default values.

Remote Access

Remote access means using a Polycom RealPresence Group system in some way other than through the local interface, such as by using the web, a serial port, or telnet. A *session* is an instance of a user connected to the system through one of these interfaces. Sessions include an indication of how you are logged on to the RealPresence Group system, such as the local interface, web interface, Telnet, or serial API.

To configure remote access settings:

1 Do one of the following:

- In the local interface, go to **Settings > Administration > Security > Remote Access**.
- In the web interface, go to **Admin Settings > Security > Global Security > Access**.

2 Configure the following settings. Not all settings are available on both interfaces. The visibility of some settings is affected by the type of security profile your system uses.

Setting	Description
Enable Network Intrusion Detection System (NIDS) (web interface only)	Activates the ability to log entries to the security log when the system detects a possible network intrusion. This setting is enabled or disabled by default based on the security profile, but can be changed.
Enable Web Access	Specifies whether to allow remote access to the system by using the web interface.
Allow Access to User Settings	Specifies whether the User Settings screen is accessible to users through the local interface. For more information about user access settings, refer to Managing User Access to Settings and Features on page 113.
Restrict to HTTPS	Specifies that the web server is accessible only over a secure HTTPS port. Enabling this setting closes the HTTP port and so disables redirects of sessions from HTTP to HTTPS (all access must be initiated as HTTPS).
Web Access Port (HTTP)	Specifies the port to use when accessing the system using the Polycom RealPresence Group system web interface using HTTP. If you change this from the default (port 80), specify a port number of 1025 or higher, and make sure the port is not already in use. You will need to include the port number with the IP address when you use the Polycom RealPresence Group system web interface to access the system. This makes unauthorized access more difficult. If **Restrict to HTTPS** is enabled, the **Web Access Port** setting is unavailable.
Enable Telnet Access	Specifies whether to allow remote access to the system by telnet.
Enable SNMP Access	Specifies whether to allow remote access to the system by SNMP.
Allow Video Display on Web (local interface only)	Specifies whether you can use the Polycom RealPresence Group system web interface to view the room where the system is located, or video of calls in which the system participates. **Note:** This feature activates both near site and far site video displays in Web Director.

Setting	Description
Lock Port after Failed Logins	For information about this setting, refer to Port Lockout on page 119.
Idle Session Timeout in Minutes (web interface only)	Specifies the number of minutes your web interface session can be idle before the session times out.
Maximum Number of Active Sessions (web interface only)	Specifies the maximum number of users who can be logged in to and using your system through Telnet or the web interface at the same time.

Managing User Access to Settings and Features

You can allow users to change common user preferences by providing access to the User Settings screen.

To allow users to customize the workspace, select the **Allow Access to User Settings** option to make the **User Settings** choice on the Settings screen available to users on the local interface's Home screen.

If the Polycom RealPresence Group system is paired with a Polycom Touch Control, selecting **Allow Access to User Settings** makes the **RealPresence Group** tab available on the Touch Control User Settings screen.

User Settings contains the following options, which are also available to administrators under Admin Settings:

- Meeting Password
- Backlight Compensation
- Mute Auto-Answer Calls (not available in the **Maximum** Security Profile)
- Far Control of Near Camera (not available in the **Maximum** Security Profile)
- Auto Answer Point-to-Point or Multipoint Video (not available in the **Maximum** Security Profile)
- Allow Video Display on Web (not available in the **Maximum** Security Profile)

Detecting Intrusions

The Polycom RealPresence Group system logs an entry to the security log when it detects a possible network intrusion. This logging is controlled by the setting **Admin Settings > Security > Global Security > Access > Enable Network Intrusion Detection System (NIDS)**. The security log prefix identifies the type of packet detected, as shown in the following table.

Prefix	Packet Type
SECURITY: NIDS/unknown_tcp	Packet that attempts to connect or probe a closed TCP port
SECURITY: NIDS/unknown_udp	Packet that probes a closed UDP port
SECURITY: NIDS/invalid_tcp	TCP packet in an invalid state
SECURITY: NIDS/invalid_icmp	ICMP or ICMPv6 packet in an invalid state
SECURITY: NIDS/unknown	Packet with an unknown protocol number in the IP header
SECURITY: NIDS/flood	Stream of ICMP or ICMPv6 ping requests or TCP connections to an opened TCP port

Following the message prefix, the security log entry includes the timestamp and the IP, TCP, UDP, ICMP, or ICMPv6 headers. For example, the following security log entry shows an "unknown_udp" intrusion:

```
2009-05-08 21:32:52 WARNING kernel: SECURITY: NIDS/unknown_udp
IN=eth0 OUT= MAC=00:e0:db:08:9a:ff:00:19:aa:da:11:c3:08:00
SRC=172.18.1.80 DST=172.18.1.170 LEN=28 TOS=0x00 PREC=0x00 TTL=63
ID=22458 PROTO=UDP SPT=1450 DPT=7788 LEN=8
```

Configuring Admin ID and Password for the Polycom Touch Control

You can set an Admin ID and password, which allows you to limit access to the Polycom Touch Control Administration settings.

To set a Polycom Touch Control admin ID and password:

1. From the Home screen touch **Administration.**

   An admin ID and password might be configured for the Touch Control Administration settings. The default ID is `admin` and the default password is `456`.

2. Touch the **Security** tab.
3. Set the following security settings.

Setting	Description
Admin ID	Specifies the ID for the administrator account. The default Admin ID is `admin`.
Admin Password	Specifies the password for administrator access when logging in to the Touch Control. The default password is `456`. When this password is set, you must enter it to configure the Touch Control Admin Settings. The password must not contain spaces.

Local Accounts

Password Policies

You can configure password policies for Admin, User, Meeting, Remote Access, and SNMP passwords. These password settings can ensure that strong passwords are used. Polycom strongly recommends that you create an Admin password for your system.

To configure password policies:

1. In the web interface, go to **Admin Settings > Security > Local Accounts > Password Requirements**.
2. Configure the following settings for **Admin Room**, **User Room**, **Meeting**, **Remote Access**, or **SNMP** passwords.

Setting	Description
Minimum Length	Specifies the minimum number of characters required for a valid password.
Require Lowercase Letters	Specifies whether a valid password must contain one or more lowercase letters.
Require Uppercase Letters	Specifies whether a valid password must contain one or more uppercase letters.
Require Numbers	Specifies whether a valid password must contain one or more numbers.
Require Special Characters	Specifies whether a valid password must contain one or more special characters. Supported characters include: @ - _ ! ; $, \ / & . # *
Reject Previous Passwords	Specifies the number of most recent passwords that cannot be reused. If set to **Off**, all previous passwords can be reused.

Setting	Description
Minimum Password Age in Days	Specifies the minimum number of days that must pass before the password can be changed.
Maximum Password Age in Days	Specifies the maximum number of days that can pass before the password must be changed. **Note:** This setting is unavailable for Meeting and SNMP passwords.
Minimum Changed Characters	Specifies the number of characters that must be different or change position in a new password. If this is set to **3**, `123abc` can change to `345cde` but not to `234bcd`. **Note:** This setting is unavailable for Meeting and SNMP passwords.
Maximum Consecutive Repeated Characters	Specifies the maximum number of consecutive repeated characters in a valid password. If this is set to **3**, `aaa123` is a valid password but `aaaa123` is not.
Password Expiration Warning	Specifies how many days in advance the system displays a warning that the password will soon expire, if a maximum password age is set. **Note:** This setting is unavailable for Meeting and SNMP passwords.
Can Contain ID or Its Reverse Form	Specifies whether the associated ID or the reverse of the ID can be part of a valid password. If this setting is enabled and the ID is `admin`, passwords `admin` and `nimda` are allowed. **Note:** This setting is unavailable for Meeting passwords.

Changes to most password policy settings do not take effect until the next time the password is changed. Changes take effect immediately for **Minimum Password Age in Days**, **Maximum Password Age in Days**, and **Password Expiration Warning**. Changing **Minimum Length** from **Off** to some other value also takes effect immediately.

Account Lockout

RealPresence Group systems provide access controls that prevent unauthorized use of the system. One way someone might try to discover valid user names and passwords is by exhaustively attempting to log in, varying the user name and password data in a programmatic way until discovering a combination that succeeds. Such a method is called a "brute-force" attack.

To mitigate the risk of such an attack, two access control mechanisms are available on RealPresence Group systems. The first type of access control, account lockout, protects local accounts from being vulnerable to brute-force

attacks, while the second, port lockout, protects login ports themselves from being vulnerable to brute-force attacks. For more information about that mechanism, refer to Port Lockout on page 119.

Account lockout temporarily locks a local account from accepting logins after a configurable number of unsuccessful attempts to log in to that account. It protects only the local RealPresence Group system's Admin and User local accounts. When external authentication is used, the Active Directory Server protects Active Directory accounts.

RealPresence Group systems provide separate account lockout controls for each of their local accounts, which are named **Admin** and **User**. The account lock can be invoked due to failed logins on any of the following login ports:

- Local interface
- Web interface
- Telnet interface

To configure the account lockout feature:

1. In the web interface, go to **Admin Settings > Security > Local Accounts > Account Lockout**.
2. Configure these settings for the appropriate account on the Account Lockout page. You can configure account lock for the admin account, user account, or both accounts.

Setting	Description
Lock Admin/User Account after Failed Logins	Specifies the number of failed login attempts allowed before the system locks the account. If set to **Off**, the system does not lock the user account due to failed login attempts.
Admin/User Account Lock Duration	Specifies the amount of time that the account remains locked due to failed login attempts. After this time period has expired, the failed login attempts counter is reset to zero and logins to the account are once again allowed.
Reset Admin/User Account Lock Counter After	Specifies the "failed login window" period of time, starting with the first failed login attempt, during which subsequent failed login attempts will be counted against the maximum number allowed (**Lock Admin/User Account after Failed Logins**). If the number of failed login attempts made during this window does not reach the maximum number allowed, the failed login attempts counter is reset to zero at the end of this window. **Note:** The failed login attempts counter is always reset to zero anytime a user successfully logs in.

The following are examples of how the account lockout feature works.

A RealPresence Group system web interface is configured with these settings:

- **Admin Settings > Security > Local Accounts > Account Lockout > Lock Admin Account after Failed Logins** is set to **4**.
- **Admin Settings > Security > Local Accounts > Account Lockout > Admin Account Lock Duration** is set to **1 Minute**.
- **Admin Settings > Security > Local Accounts > Account Lockout > Reset Admin Account Lock After** is set to **1 Hour**.

Scenario 1 - Admin account locked due to excessive failed logins

A user fails to log in to the **Admin** account twice on the web interface, and the same or another user fails to log in to the **Admin** account on the local interface. This means that three failed attempts have been made to the **Admin** account so far. If the next attempt to log in to the **Admin** account on any login port is unsuccessful, which would mean **4** failed logins, further attempts to access the **Admin** account are locked out for **1 Minute** (the expiration of the **Admin Account Lock Duration** period). After the **1 Minute** account lock duration has past, logins will once again be allowed. As this example illustrates, the failed login attempts made to an account accumulate across any login port.

Scenario 2 - Successful login resets the failed login attempts counter

A user fails to log in to the **Admin** account twice on the web interface, and the same or another user fails to log in to the **Admin** account on the local interface. This means that three failed attempts have been made to the **Admin** account so far. If the next login attempt is successful, then the failed login attempts counter for the **Admin** account is reset to zero and now once again 4 failed attempts can be made before the **Admin** account would be locked.

Scenario 3 - Failed attempts counter resets after failed login window closes

A user fails to log in to the **Admin** account twice on the web interface, and the same or another user fails to log in to the **Admin** account on the local interface. This means that three failed attempts have been made to the **Admin** account so far. If no more failed attempts are made within **1 Hour** of the first failed attempt (which is the value of the **Reset Admin Account Lock Counter After** setting), the failed login attempts counter for the **Admin** account is reset to zero, and 4 failed attempts are allowed again before the **Admin** account is locked.

Whitelist

When a whitelist is enabled, the Polycom RealPresence Group system web interface and SNMP ports accept connections only from specified IP addresses. You can use this feature only through the web interface.

The Whitelist configuration requires either single IP addresses or an IP and netmask. The netmask represents the number of valid bits of the IPv4 address to use.

In environments where dynamic address assignment is used, be sure to keep the Whitelist up to date with the latest assigned addresses for computers authorized to access the system. Failing to update the Whitelest means these computers will not be able to connect to the system.

Valid formats for Whitelist IP address are:

- `10.12.128.7`
- `172.26.16.0/24`
- `2001:0:99:0:2e0:dbff:fe30:405b`

To create a whitelist on the web interface:

1. Go to **Admin Settings > Security > Global Security > Access**.
2. Select **Enable Whitelist**.
3. Select **Edit Whitelist**.
4. Select whether the **Address Type** is **IPv4** or **IPv6**.
5. In the text field, enter the IP address of the system you want to allow. Follow the format suggested by the address type you selected.
6. Click **Add**.

   Repeat this step for all the IP addresses you want to add. You can add web server and SNMP addresses.

   Use the **Clear** button to clear the address field.
7. Click **Close** after adding all the IP addresses.

If you entered an address in error, you can highlight it in the list and click **Remove**. You can also select all of the addresses in the list by clicking the checkbox next to **Address**.

Port Lockout

Port lockout protects against brute-force attacks by temporarily locking the login port after a configurable number of unsuccessful login attempts have been made, regardless of which account was used. It is supported only on the web interface.

The telnet port has its own port lock feature that is enabled regardless of the state of the port lock feature configuration. Specifically, the telnet server disconnects a telnet login session after 5 failed login attempts. If a new session is started, another 5 attempts are allowed.

To configure the port lockout feature:

1. In the web interface, go to **Admin Settings > Security > Global Security > Access**.
2. Configure these settings.

Setting	Description
Lock Port after Failed Logins	Specifies the number of failed login attempts allowed before the system locks the web interface from accepting logins. If set to **Off**, the system does not lock the web interface due to failed login attempts.
Port Lock Duration	Specifies the amount of time that a web interface remains locked due to failed login attempts. After this time period expires, the failed login attempts counter is reset to zero and logins to the web interface are once again allowed.
Reset Port Lock Counter After	Specifies a "failed login window" period of time, starting with the first failed login attempt, during which subsequent failed login attempts will be counted against the maximum number allowed (**Lock Port after Failed Logins**). If the number of failed login attempts made during this window does not reach the maximum number allowed, the failed login attempts counter is reset to zero at the end of this window. **Note:** The failed login attempts counter is always reset to zero anytime a user successfully logs in.

Port lockout is supported only on the web interface, and only Admin users are allowed to log in to the web interface. If external authentication *is not* in use, users can successfully log in to the web interface only by using the local Admin account credentials. However, when external authentication *is* in use, any number of external accounts can be considered to be Admin users on the system. Failed logins to any of these accounts, or to an unknown account, are all counted against the configured number allowed failed login attempts to the web interface.

The following is an example of how the port lockout feature works.

A RealPresence Group system web interface is configured with these settings:

- **Admin Settings > Security > Global Security > Authentication> Enable Active Directory External Authentication** is enabled, a valid **Active Directory Server Address** is configured, as are both the **Active Directory Admin Group** and **Active Directory User Group** settings.
- **Admin Settings > Security > Global Security > Access > Lock Port after Failed Logins** is set to **4**.
- **Admin Settings > Security > Global Security > Access > Port Lock Duration** is set to **1 Minute**.
- **Admin Settings > Security > Global Security > Access > Reset Port Lock Counter After** is set to **1 Hour**.

Scenario 1 - Web interface locked due to excessive failed logins

A user fails to log in to the local **Admin** account two times on the web interface, and another user fails to log in to the external Active Directory 'SuperUser' account in a separate web interface session. The 'SuperUser' account is defined as part of the Active Directory Admin Group on the Active Directory Server.

This means that three failed attempts have been made on the web interface port—two by one user and one by a second user. If the next attempt to log in to the web interface by either user or some other user is successful, the failed login counter for the web interface port is reset to zero, allowing 4 more failed attempts to occur on the web interface.

On the other hand, if after the third failed login attempt, any user makes a fourth unsuccessful attempt to any account on the web interface, further attempts to access the web interface using any account credentials from any user are locked out for **1 Minute**, the value of the **Port Lock Duration** period. After the **1 Minute** port lock period has past, logins will once again be allowed. As this example illustrates, the failed login attempts made to the web interface accumulate across any attempts to any account and/or by any user.

Scenario 2 – Failed attempts counter resets after failed login window closes

A user fails to log in to the local **Admin** account two times on the web interface, and another user fails to log in to the external Active Directory 'SuperUser' account in a separate web interface session. The 'SuperUser' account is defined as part of the Active Directory Admin Group on the Active Directory Server.

This means that three failed attempts have been made on the web interface port—two by one user and one by a second user. If no more failed attempts are made within **1 Hour** of the first failed attempt (which is the value of the **Reset Port Lock Counter After** setting), the failed login attempts counter is reset to zero, and 4 failed attempts are allowed again before the web interface is locked.

Encryption

AES encryption is a standard feature on all Polycom RealPresence Group systems. When it is enabled, the system automatically encrypts calls to other systems that have AES encryption enabled.

If encryption is enabled on the system, a locked padlock icon appears on the monitor when a call is encrypted. If a call is unencrypted, an unlocked padlock appears on the monitor. In a multipoint call, some connections might be encrypted while others are not. The padlock icon might not accurately indicate whether the call is encrypted if the call is cascaded or includes an audio-only endpoint. To avoid security risks, Polycom recommends that all participants communicate the state of their padlock icon verbally at the beginning of a call.

Points to note about AES Encryption:

- AES Encryption is not supported on systems registered to an Avaya H.323 gatekeeper.
- For Polycom RealPresence Group systems with a maximum speed of 6 Mbps for unencrypted calls, the maximum speed for encrypted SIP calls is 4 Mbps.

RealPresence Group systems provide the following AES cryptographic algorithms to ensure flexibility when negotiating secure media transport:

- H.323 (per H.235.6)
  - AES-CBC-128 / DH-1024
  - AES-CBC-256 / DH-2048
- SIP (per RFCs 3711, 4568, 6188)
  - AES_CM_128_HMAC_SHA1_32
  - AES_CM_128_HMAC_SHA1_80
  - AES_CM_256_HMAC_SHA1_32
  - AES_CM_256_HMAC_SHA1_80

RealPresence Group systems also support the use of FIPS 140 validated cryptography, which is required in some instances, such as when used by the U.S. federal government. When the **Require FIPS 140 Cryptography** setting is enabled, all cryptography used on the system comes from a software module that has been validated to FIPS 140-2 standards. You can find its FIPS 140-2 validation certificate here: http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/140val-all.htm#1747.

To enable encryption:

1 Do one of the following:

- In the local interface, go to **Settings > Administration > Security > Settings**.
- In the web interface, go to **Admin Settings > Security > Global Security > Encryption**.

2 Configure these settings.

Setting	Description
Require AES Encryption for Calls AES Encryption in local interface	Specifies how to encrypt calls with other sites that support AES encryption. • **Off**—AES Encryption is disabled. • **When Available**—AES Encryption is used with any endpoint that supports it, even if the other endpoints in the call don't support it. • **Required for Video Calls Only**—AES Encryption is used for all video endpoints in the call. Video endpoints must support AES Encryption to participate in the call. • **Required for All Calls**—AES Encryption is used for all video endpoints in the call. All endpoints must support AES Encryption to participate in the call.
Require FIPS 140 Cryptography (web interface only)	Enables the exclusive use of the FIPS 140-2-validated software cryptography module for cryptographic functions. Also disables all "weak" protocols and ciphers, including: • SSLv2 • SSLv3 • Non-FIPS 140-2 approved TLS cipher suites

Configuring Encryption Settings for Integration with Microsoft Servers

Polycom RealPresence Group systems support media encryption in calls with Microsoft Lync 2010/2013. The encryption settings for each component also affect the ability to place encrypted calls.

Both the Microsoft Lync Server pool and the Polycom RealPresence Group system need to be configured to support encryption in order for calls to connect with encryption. If both components have encryption turned off, calls connect without encryption. If one component is set to require encryption and the other is not, calls fail to connect.

Calls from a Polycom RealPresence Group system to a Polycom RMX system using Microsoft Lync Server require that the Polycom RealPresence Group system have encryption set to **When Available**.

For more information about encryption configuration in a Microsoft Lync Server environment, refer to the *Polycom Unified Communications Deployment Guide for Microsoft Environments*.

List of Sessions

You can use the sessions list to see information about everyone logged in to a RealPresence Group system including:

- Type of connection, for example, Web
- ID associated with the session, typically Admin or User
- Remote IP address (that is, the addresses of people logged in to the RealPresence Group system from their computers)

To view the Sessions List:

>> From the local interface, go to **Settings > System Information > Diagnostics > Sessions**.

>> From the web interface, go to **Diagnostics > System > Sessions**.

Managing Certificates and Revocation

If your organization has deployed a public key infrastructure (PKI) for securing connections between devices on your network, Polycom recommends that you have a strong understanding of certificate management and how it applies to Polycom RealPresence Group Series products before you integrate these products with the PKI.

Polycom RealPresence Group systems can use certificates to authenticate network connections to and from the Polycom RealPresence Group system. Other web applications also use certificates, as you might notice when you navigate the Internet. The system uses configuration and management techniques typical of PKI to manage certificates, certificate signing requests, and revocation checking. ANSI X.509 standards regulate the characteristics of certificates and revocation.

Polycom RealPresence Group systems are able to generate requests for certificates (CSRs) that can be then sent to a certificate authority (CA) for official issuance. The CA is the trusted entity that issues, or signs, digital certificates for others. Once signed by the CA, the certificate can then be installed on the RealPresence Group system for use in all TLS connections used by the system.

RealPresence Group systems support and typically require the generation and use of two separate certificates when used in an environment that has a fully deployed PKI:

1. A Server certificate—the RealPresence Group system's web server presents this certificate after receiving connection requests from browsers attempting to connect to the RealPresence Group system web interface.
2. A Client certificate—the RealPresence Group system presents this certificate to a remote server when challenged to provide a certificate as part of authenticating the identity of the RealPresence Group system before allowing it to connect to the remote server. Examples of remote servers include the RealPresence® Resource Manager system, a SIP proxy/registrar server, or an LDAP directory server.

When RealPresence Group systems are deployed in an environment that does not have a fully deployed PKI, you do not need to install these certificates because all RealPresence Group systems automatically generate *self-signed* certificates that can be used to establish secure TLS connections. However, when a full PKI has been deployed, self-signed certificates are not trusted by the PKI and so signed certificates must be used. The following sections describe how to generate and use certificates by using the Polycom RealPresence Group system web interface.

Generating Certificate Signing Requests (CSRs)

The RealPresence Group system allows you to install one client and one server certificate for identification of the RealPresence Group system to network peers. In order to obtain these certificates you must first generate a Certificate Signing Request (CSR) for each certificate. This request, also known as an *unsigned certificate*, must be submitted to a CA so that it can be signed, after which the certificate can be installed on the RealPresence Group system. Whether you need to generate a client-type CSR, a server-type CSR, or both depends on which features and services you intend to use, and whether your network environment supports certificate-based authentication for those services. In most cases, both certificates are needed.

For example, if your RealPresence Group system is configured to use any of the following features, and the servers providing those services perform certificate-based authentication before allowing access to them, you must create a client-type CSR and add the resulting certificate signed by the CA:

- RealPresence Resource Manager system Provisioning
- RealPresence Resource Manager system Monitoring
- RealPresence Resource Manager system LDAP Directory
- RealPresence Resource Manager system Presence
- Calendaring
- SIP
- 802.1X

The RealPresence Group system web server uses the server-type CSR and resulting certificate whenever a user attempts to connect to the RealPresence Group system web interface. The web server does so by presenting the server

certificate to the browser to identify the system to the browser as part of allowing the browser to connect to the system. The browser's user needs the server certificate if he or she wants to be certain about the identity of the RealPresence Group system he or she is connecting to. Settings in the web browser typically control the validation of the server certificate, but you can also validate the certificate manually.

To obtain a client or server certificate, you must first create a CSR. You can create one client and one server CSR and submit each to the appropriate CA for signing. After the CSR is signed by a CA, it becomes a certificate you can add to the RealPresence Group system.

To create a CSR:

1. Go to **Admin Settings > Security > Certificates > Certificate Options**.
2. Click **Create** for the type of CSR you want to create, **Signing Request Server** or **Signing Request Client**. The procedure is the same for server and client CSRs.
3. Configure these settings on the Create Signing Request page.

Setting	Description
Hash Algorithm	Specifies the hash algorithm for the CSR. You may select SHA-256 or keep the default SHA-1.
Common Name (CN)	Specifies the name that the system assigns to the CSR. Polycom recommends the following guidelines for configuring the Common Name: • For systems registered in DNS, use the Fully Qualified Domain Name (FQDN) of the system. • For systems not registered in DNS, use the IP address of the system.
Organizational Unit (OU)	Specifies the unit of business defined by your organization.
Organization (O)	Specifies your organization's name.
City or Locality (L)	Specifies the city where your organization is located.
State or Province (ST)	Specifies the state or province where your organization is located.
Country (C)	Displays the country selected in **Admin Settings > General Settings > My Information**.

The RealPresence Group system supports only one OU field. If you want the signed certificate to include more than one OU field, you must download and edit the CSR manually.

After you create the CSR, a message indicating that the CSR has been created is displayed. Two links appear next to the signing request that you just created (**Signing Request Server** or **Signing Request Client**).

- **Download Signing Request** enables you to download the CSR so that it can be sent to a CA for signature.
- **Create** enables you to view the fields of the CSR as they are currently set in the CSR. If you change any of the values you previously configured, you can click **Create** to generate a new CSR that can then be downloaded.

When creating client and server CSRs, one type of CSR overwrites the other if the information in the editable fields of both CSRs is identical. Be sure to change at least one character in any of the editable fields. Also, only a single outstanding CSR of either type can exist at a time. After the CSR is generated, it is important to get it signed and installed before attempting to generate a different CSR of the same type. For example, if you generate a client CSR and then, prior to having it signed and installed on the RealPresence Group system, another client CSR is generated, the previous CSR is discarded and invalidated, and any attempt to install a signed version of it will result in an error.

Installing Certificates

After you have downloaded a CSR and it has been signed by a CA, the resulting certificate is ready to install on the RealPresence Group system. The following section outlines how to do this, and the procedure is the same for installing the client certificate, the server certificate, and any required CA-type certificates.

To add a signed certificate on the Certificates page:

1. Click **View and Add** to open the certificate section.
2. Next to **Add Certificate**, click **Browse** to search for and select a certificate. You might be installing a client or server certificate that has been signed by a CA after having been previously generated as a CSR, or installing a CA certificate needed by the RealPresence Group system to validate a certificate it receives from another system.
3. Click **Open**.

   The system checks the certificate data and adds it to the list. If you don't see the certificate in the list, the system was unable to recognize the certificate. This process is sometimes referred to as *installing* a certificate.

You can select a certificate in the list to view its contents. You can also remove a certificate from the list by clicking **Remove**.

4 If needed, click **Close** to close the certificate section of the page.

When you add a CA certificate to the RealPresence Group system, the certificate becomes trusted for the purpose of validating peer certificates.

If you do not add the server certificate for the RealPresence Group system before using the web interface, you might receive error messages from your browser stating that the security certificate for the web site "Polycom" cannot be verified. Most browsers allow the user to proceed after this warning is displayed. See the Help section of your browser for instructions on how to do this.

Configuring Certificate Validation Settings

Certificates are authorized externally when they are signed by the CA. The certificates can be automatically validated when they are used to establish an authenticated network connection. To perform this validation, the RealPresence Group system must have certificates installed for all CAs that are part of the *trust chain*. A trust chain is the hierarchy of CAs that have issued certificates from the device being authenticated, through the intermediate CAs that have issued certificates to the various CAs, leading back to a *root* CA, which is a known trusted CA. The following sections describe how to install and manage these certificates.

A certificate exchange is between a server and a client, both of which are peers. When a user is accessing the RealPresence Group system web interface, the RealPresence Group system is the server and the web browser is the client application. In other situations, such as when the RealPresence Group system connects to LDAP directory services, the RealPresence Group system is the client and the LDAP directory server is the server.

To configure certificate usage:

1 Go to **Admin Settings > Security > Certificates > Certificate Options**.

2 Configure these settings on the Certificates screen:

Setting	Description
Maximum Peer Certificate Chain Depth	Specifies how many links a certificate chain can have. The term *peer certificate* refers to any certificate sent by the far-end host to the RealPresence Group system when a network connection is being established between the two systems.
Always Validate Peer Certificates from Servers	Controls whether the RealPresence Group system requires the remote server to present a valid certificate when connecting to it for services such as those listed for client-type CSRs in Generating Certificate Signing Requests (CSRs) on page 125 (provisioning, directory, SIP, and so forth).
Always Validate Peer Certificates from Browsers	Controls whether the RealPresence Group system requires a browser to present a valid certificate when it tries to connect to the web interface.

Configuring Certificate Revocation Settings

When certificate validation is enabled (refer to Configuring Certificate Validation Settings on page 128), the RealPresence Group system tries to validate the peer certificate chain on secure connection attempts for the applicable network services.

Part of the validation process includes a step called *revocation checking*. This type of check involves consulting with the CA that issued the certificate in question to see whether the certificate is still active or has been revoked for some reason. Revoked certificates are considered invalid because they might have been compromised in some way or improperly issued, or for other similar reasons. The CA is responsible for maintaining the revocation status of every certificate that it issues. The RealPresence Group system can check this revocation status by using either of the following methods:

- Certificate revocation lists (CRLs). A CRL is a list of certificates that have been revoked by the CA. A CRL must be installed on the RealPresence Group system for each CA whose certificate has been installed on the system.
- The Online Certificate Status Protocol (OCSP). OCSP allows the RealPresence Group system to contact an *OCSP responder*, which is a network server that provides real-time certificate status through a query/response message exchange.

You must configure the RealPresence Group system to use the revocation method most appropriate for your environment.

To use CRLs:

1 Go to **Admin Settings > Security > Certificates > Revocation.**

2 Configure these settings on the Revocation page.

Setting	Description
Revocation Method	Select the CRL method.
Allow Incomplete Revocation Checks	When this field is enabled, a certificate in the chain is verified without a revocation status check if no corresponding CRL for the issuing CA is installed. The RealPresence Group system assumes that the lack of a CRL means the certificate is not revoked. If a CRL is installed, the system performs a revocation check when validating the certificate.
Add CRL	1 Click **Browse** to search for and select a CRL. 2 Click **Open** to add the CRL to the list.

You can also remove a CRL from the list by clicking **Remove**.

The RealPresence Group system does not support automatically downloading or updating CRLs. The RealPresence Group system administrator is responsible for manually installing and updating CRLs ahead of their expiration. It is extremely important that CRLs be kept up to date prior to their expiration.

The system fails any revocation check on a certificate if the system has an expired CRL loaded for the issuing Certificate Authority (CA). After a CRL expires, the only way to remove the CRL is to delete all CRL and certificate data from the system and then reinstall it. See the Deleting Certificates and CRLs on page 133 for more information.

To use OCSP:

1 Go to **Admin Settings > Security > Certificates > Revocation.**

2 Configure these settings on the Revocation page.

Setting	Description
Revocation Method	Select the OSCP method.
Allow Incomplete Revocation Checks	When this field is enabled, the RealPresence Group system treats the following response from the OCSP responder as a successful revocation checks that would otherwise be considered a failed check: • If the OCSP responder responds that the status is *unknown* or if no response is received, the system treats this as a successful revocation check. Regardless of the state of this setting, the following statements apply: • If the OCSP responder indicates a known *revoked* status, the RealPresence Group system treats this as a revocation check failure and does not allow the connection. • If the OCSP responder indicates a known *good* status, the RealPresence Group system treats this as a successful revocation check and allows the connection.
Global Responder Address	Specifies the URI of the responder that services OCSP requests (for example, `http://responder.example.com/ocsp`). This responder is used for all OCSP validation when **Use Responder Specified in Certificate** is disabled, and is sometimes used even when **Use Responder Specified in Certificate** is enabled. Polycom therefore recommends that you always enter a **Global Responder Address** regardless of the value chosen for the **Use Responder Specified in Certificate** setting.
Use Responder Specified in Certificate	In some cases, the certificate itself includes the responder address. When this field is enabled, the RealPresence Group system attempts to use the address in the certificate (when present) instead of the **Global Responder Address** specified in the previous field. **Note:** The Polycom RealPresence Group system supports only the use of HTTP URLs in the AIA field of a certificate when **Use Responder Specified in Certificate** is enabled.

If you use OCSP, you might need to install one or more additional CA certificates on the RealPresence Group system, for validation of the OCSP response messages.

Certificates and Security Profiles within a Provisioned System

When your RealPresence Group system is provisioned through the RealPresence Resource Manager system and you use PKI certificates, consider the following information. Be sure to enable provisioning **after** you follow the procedures applicable to each Security Profile type.

- To use the Maximum Security Profile with provisioning:
  - The RealPresence Resource Manager system must be using Maximum Security Mode.
  - You must manually assign the Maximum Security Profile to the RealPresence Group endpoint during installation using the setup wizard, or afterwards using the web interface.
  - You must use full PKI and observe the following procedures before you enable provisioning on the RealPresence Group endpoint:
    1. You must install a signed client certificate on the RealPresence Group system to enable the provisioning connection to be authenticated by the RealPresence Resource Manager system.
    2. Decide whether to automatically validate web clients by enabling the **Always Validate Peer Certificates from Browsers** setting. If you do enable the setting, you'll need to install a signed server certificate and all of the CA certificates needed to validate browser certificates for all web clients. Then configure the certificate revocation method.
    3. Decide whether to validate servers by enabling the **Always Validate Peer Certificates from Servers** setting. If you do enable the setting, you must install of the CA certificates needed to validate server certificates from all remote servers. Then adjust the certificate revocation method accordingly. For example, you might need to load additional CRLs if you use the CRL revocation method).
- To use the Medium or High Security Profile with provisioning:
  - The RealPresence Resource Manager system must be using commercial mode.
  - You must manually assign the Medium or High Security Profile to the RealPresence Group endpoint during installation using the setup wizard, or afterwards using the web interface.
  - Configure PKI according to your company's guidelines.

- To use the Low Security Profile with provisioning:
  - The RealPresence Resource Manager system must be using commercial mode.
  - You can enable provisioning in the setup wizard. All provisionable settings are taken from the RealPresence Resource Manager system.

Deleting Certificates and CRLs

In some cases, expired certificates or CRLs might prevent you from accessing the web interface. You can use the local interface to reset your system without certificates, to restore access to the web interface.

To delete all certificates and CRLs the RealPresence Group system is using:

1. In the local interface, go to **System > Diagnostics > Reset System**.
2. If needed, enter the **Admin ID** and **Password**.
3. Enable the **Delete Certificates** field.
4. Select **Reset System**.

The RealPresence Group system restarts after deleting all installed certificates and CRLs.

RealPresence Server Address Configuration in PKI-enabled Environments

When configuring the server addresses for the services listed in Generating Certificate Signing Requests (CSRs) on page 125 as potentially needing a client-type CSR (such as SIP, LDAP directory etc.), you might need to use a particular address format if the server address is contained in the server certificate that it presents when connecting to it. If this is the case, use the following guidance for configuring these server addresses on the RealPresence Group system:

- If the certificate contains the fully qualified domain name (FQDN) of the server, use the FQDN when configuring the server address.
- If the certificate contains the IP address of the server, use the IP address when configuring the server address.
- If the certificate does not contain any the server's address in any form, you can use either the FQDN or the IP address of the server when configuring the server address.

Security Banners

Security Banners are text that can be displayed on the Login screen and in a window when you log in remotely.

The following is an example of banner text:

```
This machine is the property of Polycom, Inc., and its use is governed
by company guidelines. You have NO right of privacy when using this
machine.
```

The security banner is not supported with the Polycom Touch Control.

To configure a security banner:

1. In the web interface, go to **Admin Settings > Security > Security Banner**.
2. Configure these settings.

Setting	Description
Enable Security Banner	Specifies whether to display a security banner.
Banner Text	**Custom**—Allows you to enter text to use for the banner. **DoD**—Specifies that the system displays a default U.S. Department of Defense security banner. You cannot view or change this text on the local interface, but you can change the text on the web interface.
Local System Banner Text	If you enable the security banner on the web interface, enter up to 2,408 single-byte or 1,024 double-byte characters. The text wraps to the next line as you type, but you can press ENTER anywhere in a line to force a line break at a specific place.
Remote Access Banner Text	This field is visible only when you use the web interface. You can type or paste a maximum of 2,408 single-byte or 1,024 double-byte characters. The text wraps to the next line as you type, but you can press ENTER anywhere in a line to force a line break at a specific place.

Setting up Log Management

The Polycom RealPresence Group system log files consist of the following information:

- System logs
- Call Detail Report (CDR)
- Configuration profile

You can download logs automatically or manually by using the Polycom RealPresence Group system web interface. For more information about log management, refer to the following sections.

The date and time of system log entries for RealPresence Group systems are shown in GMT.

You can also manage Polycom Touch Control log files from the Touch Control interface. Refer to Managing Polycom Touch Control Logs on page 136 for more information.

When the log fills up past the threshold, the following actions are triggered:

- Transfers the log to the USB device if Transfer Frequency is set to "Auto at Threshold"
- Creates a log entry indicating that the threshold has been reached
- Displays an alert on the home screen
- Displays an indicator on the System Status screen

To view the log file status, do one of the following:

- In the local interface, go to **Settings > System Information > Status > Log Management**.
- In the web interface, go to **Diagnostics > System > System Status** and select the **More Info** link for **Log Threshold**.

When the Log Threshold system status indicator is red, automatic log transfers cannot be completed and data may be lost. You must manually transfer the logs to a USB device.

To configure log management:

1. In the web interface, go to **Admin Settings > Security > Log Management**.
2. Configure these settings.

Setting	Description
Current Percent Filled	Displays how full the log file is, as a percentage of the total size.
Percent Filled Threshold	Specifies a threshold for the percent filled value. Reaching the threshold triggers an alarm, creates a log entry, and transfers the log if **Transfer Frequency** is set to **Auto at Threshold**. **Off** disables logging threshold notifications.
Folder Name	Specifies the name to give the folder for log transfers. **System Name and Timestamp** — Folder name is the system name and the timestamp of the log transfer, in the date and time format specified on the Location screen. For example, if the system name is "Marketing", the folder name could be `marketing_MMddyyyymmssSSS`. **Timestamp** — Folder name is the timestamp of the log transfer, in the date and time format specified on the Location screen, for example `yyyyMMddhhmmssSSS`. **Custom** — Optional folder name for manual log transfers.
Storage Type	Specifies the type of storage device used for log file transfers.
Transfer Frequency	Specifies when the logs are transferred: **Manual** — The transfer starts when you select the **Start Log Transfer** button, which is visible only on the local interface. If the log fills before being transferred, new events overwrite the oldest events. **Auto at Threshold** — The transfer starts automatically when the Percent Filled Threshold is reached.

To transfer the log manually:

1. In the local interface, go to **Settings > Administration > Security > Log Management**.
2. Click **Transfer System Log to USB Device**.
3. The system saves a file in the USB named according to the settings you chose in the web interface.
4. Wait until the system displays a message that the log transfer has completed successfully before you remove the storage device.

Managing Polycom Touch Control Logs

You can transfer the Touch Control logs to an external USB storage device.

To transfer Polycom Touch Control logs:

1. Ensure that a USB device is connected to the USB port on the right side of the Polycom Touch Control.
2. From the Home screen touch **Administration.**

   An admin ID and password might be configured for the Touch Control Administration settings. The default ID is `admin` and the default password is `456`.
3. Under **Security**, select **Transfer Touch Control Logs to USB Device**.

   A popup message displays when the log transfer completes successfully.

Configuring a Meeting Password

A Meeting password specifies the password users must supply to join multipoint calls on the RealPresence Group system if the call uses the internal multipoint option, rather than a bridge.

Points to Note about Meeting Passwords:

- Do not set a meeting password if multipoint calls include audio-only endpoints. Audio-only endpoints are unable to participate in password-protected calls.
- Microsoft Office Communicator clients are unable to join password-protected multipoint calls.
- SIP endpoints are unable to dial in to password-protected multipoint calls.
- If a meeting password has been set for a call, People+Content™ IP clients must enter the password before joining the meeting.

To configure a meeting password:

1. Do one of the following:
   - In the local interface, go to **Settings > Administration > Security > Passwords**.
   - In the web interface, go to **Home > Place a Call > Manual Dial > Meeting Password**.
2. Enable and configure this setting.

Setting	Description
Meeting Password	Specifies the password users must supply to join multipoint calls on this system if the call uses the internal multipoint option, rather than a bridge. The meeting password cannot contain spaces or be more than 32 characters.

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Managing the System Remotely

You can configure, manage, and monitor Polycom RealPresence Group systems from a computer using the system web interface. You can also use Polycom CMA, Polycom RealPresence Resource Manager,SNMP, or the API commands.

- The Polycom RealPresence Group system web interface requires only a web browser.
- Polycom CMA and RealPresence Resource Manager require the management application to be installed on your network.
- SNMP requires network management software on your network management station.
- For more information about the API commands, refer to the *Integrator's Reference Manual for the Polycom RealPresence Group Series*.

Using the Polycom RealPresence Group System Web Interface

You can use the Polycom RealPresence Group system web interface to perform most of the calling and configuration tasks you can perform on the local system. The Polycom RealPresence Group system web interface is supported only for Microsoft Internet Explorer version 9.0 on Windows 7 and Apple Safari on Mac OS X.

Accessing the Web Interface

To configure your browser to use the web interface:

- Be sure that you use Microsoft Internet Explorer 9.0 or Apple Safari as your web browser.
- Configure the browser to allow cookies.

To access the system using the web interface:

1. In your web browser address line, enter the system's IP address, for example, `http://10.11.12.13`.
2. Enter the Admin ID as the user name (default is `admin`), and enter the Admin Remote Access Password, if one is set.

Monitoring a Room or Call with the Web Interface

The monitoring feature within the web interface allows administrators of RealPresence Group systems to view a call or the room where the system is installed.

To enable room and call monitoring:

1. In the local interface, go to **Settings > Administration >Security > Remote Access**.
2. Enable **Allow Video Display on Web** to allow the room or call to be viewed remotely.

To monitor a room or call using the web interface:

1. In your web browser address line, enter the system's IP address.
2. Go to **Utilities > Tools > Remote Monitoring**.
3. Perform the following tasks, depending on whether you are in or out of a call:
   - Place or end a call
   - View near and far sites
   - Use Call Control to change moderators and broadcast participants
   - Show content from a laptop, PC, DVD player, or document camera
   - Change camera sources
   - Adjust camera position
   - Adjust system volume
   - View camera presets
   - Zoom cameras
   - Mute and unmute the microphones

Managing System Profiles with the Web Interface

Administrators managing systems that support multiple applications can change system settings using profiles. You can store a RealPresence Group system profile on a computer as a `.profile` file using the web interface. The number of profiles you can save is unlimited.

The following settings are included in a profile:

- Home screen settings
- User access levels
- Icon selections
- Option keys
- System behaviors

Passwords are not included when you store a profile.

Polycom recommends using profiles only as a way to back up system settings. Attempting to edit a stored profile or upload it to more than one system on the network can result in instability or unexpected results.

To store a profile using the web interface:

1. In your web browser address line, enter the system's IP address.
2. Go to **Utilities > Services > Profile Center**.
3. Click **Download** next to **Current Settings Profile** to download the profile file from the system.
4. Save the file to a location on your computer.

To upload a profile using the web interface:

1. Reset the Polycom RealPresence Group system to restore default settings.
2. In your web browser address line, enter the system's IP address.
3. Go to **Utilities > Services > Profile Center**.
4. Next to **Upload Settings Profile**, click **Browse** and browse to the location of the profile `.csv` file on your computer.
5. Click **Open** to upload the `.csv` file to your system.

Sending a Message

If you are experiencing difficulties with connectivity or audio, you might want to send a message to the system that you are managing.

Only the near site can see the message; it is not broadcast to all the sites in the call.

To send a message using the web interface:

1. Go to **Diagnostics > Send a Message**.
2. In the Send a Message page, enter a message (up to 100 characters in length), then click **Send**.

   The message is displayed for 15 seconds on the screen of the system that you are managing.

Configuring Servers

Setting Up a Directory Server

The global directory provides a list of other systems that are registered with the Global Directory Server and available for calls. The other systems appear in the directory, allowing users to place calls to other users by selecting their names.

You can configure the system to use one of the following directory servers in standard operating mode.

Directory Servers Supported	Authentication Protocols	Global Directory Groups	Entry Calling Information
Polycom GDS	Proprietary	Not Supported	Might include: • H.323 IP address (raw IPv4 address, DNS name, or H.323 extension) • ISDN number
LDAP with H.350 or Active Directory	Any of the following: • NTLM v2 only • Basic • Anonymous	Not Supported	Might include: • H.323 IP address (raw IPv4 address, DNS name, H.323 dialed digits, H.323 ID, or H.323 extension) • SIP address (SIP URI) • ISDN number • Phone number*

Directory Servers Supported	Authentication Protocols	Global Directory Groups	Entry Calling Information
Microsoft Lync Server 2010 and 2013	NTLM v1 only	Contact groups but not distribution lists	Might include: • SIP address (SIP URI)
* To successfully call a phone number from the LDAP directory, the phone number must be stored in one of the following formats: • +Country Code.Area Code.Number • +Country Code.(National Direct Dial Prefix).Area Code.Number			

You can configure the system to use the following directory servers when the system is automatically provisioned by a Polycom CMA or Polycom RealPresence Resource Manager system.

Directory Servers Supported	Authentication Protocol	Global Directory Groups	Entry Calling Information
LDAP by a Polycom CMA system	NTLM v2 only	Pre-defined groups from the LDAP directory are shown in Polycom RealPresence Group system's directory	Might include: • H.323 dialed digits, H.323 ID, or H.323 extension • Phone number*
Microsoft Lync Server 2010 and 2013	NTLM v1 only	Contact groups but not distribution lists	Might include: • SIP address (SIP URI)
* To successfully call a phone number from the LDAP directory, the phone number must be stored in one of the following formats: • +Country Code.Area Code.Number • +Country Code.(National Direct Dial Prefix).Area Code.Number			

To configure the Polycom GDS directory server:

1. In the web interface, go to **Admin Settings > Servers > Directory Servers** and select the **Polycom GDS Service Type**.
2. Configure these settings on the Directory Servers page.

Setting	Description
Server Address	Specifies the IP address or DNS address of the Global Directory Server. You can enter up to five addresses.
Password	Lets you enter the global directory password, if one exists.

To configure the LDAP directory server:

1. In the web interface, go to **Admin Settings > Servers > Directory Servers** and select the **LDAP** Service Type.
2. Configure these settings on the Directory Servers page.

LDAP Setting	Description
Server Address	Specifies the address of the LDAP directory server. With Automatic Provisioning, this setting is configured by the server and appears as read only.
Server Port	Specifies the port used to connect to the LDAP server. With Automatic Provisioning, this setting is configured by the server and appears as read only.
Base DN (Distinguished Name)	Specifies the top level of the LDAP directory where searches will begin. With Automatic Provisioning, this setting is configured by the server and appears as read only.
Authentication Type	Specifies the protocol used for authentication with the LDAP server: NTLM, BASIC, or Anonymous.
Use SSL (Secure Socket Layer)	Enables SSL for securing data flow to and from the LDAP server.
Bind DN (Distinguished Name)	The user ID of the person allowed to search the LDAP directory, which must be in a standard DN format such as `cn=user,dc=example,dc=com`.
Domain Name	Specifies the domain name for authentication with the LDAP server.
User Name	Specifies the user name for authentication with LDAP server.
Password	Specifies the password for authentication with the LDAP server.

To configure the Microsoft Lync Server 2010 or 2013 directory settings:

1. In the web interface, go to **Admin Settings > Network > IP > SIP Settings.**
2. Configure the SIP settings as described in Configure SIP Settings for Integration with Microsoft Servers on page 37.
3. In the web interface, go to **Admin Settings > Servers > Directory Servers** and select the **Microsoft Lync Server 2010** Service Type.

4 Configure these settings on the Directory Servers page.

Setting	Description
Registration Status	Specifies whether the system is successfully registered with the Microsoft Lync Server.
Domain Name	Specifies the Domain Name entered on the SIP Settings screen.
Domain User Name	Specifies the Domain User Name entered on the SIP Settings screen.
User Name	Specifies the User Name entered on the SIP Settings screen.

Setting Up SNMP

RealPresence Group systems support SNMP (Simple Network Management Protocol) versions 1, 2c, and 3. A RealPresence Group system sends SNMP reports to indicate conditions, including the following:

- All alert conditions found on the Polycom RealPresence Group system alert page
- Details of jitter, latency, and packet loss
- Low battery power is detected in the remote control
- A system powers on
- Administrator logon is successful or unsuccessful
- A call fails for a reason other than a busy line
- A user requests help
- A telephone or video call connects or disconnects

SNMP features specific to version 3 include the following:

- Allows for secured connectivity between the console and the SNMP agent
- Supports both IPv4 and IPv6 networks
- Logs all configuration change events
- Supports a user-based security model
- Supports trap destination addresses

Downloading MIBs

In order to allow your SNMP management console application to resolve SNMP traps and display human readable text descriptions for those traps, you need to install Polycom MIBs (Management Information Base) on the

computer you intend to use as your network management station. The MIBs are available for download from the Polycom Polycom® RealPresence® Group system web interface.

To download the Polycom MIBs using the Polycom RealPresence Group system web interface:

1. In your web browser address line, enter the RealPresence Group system's IP address.
2. Go to **Admin Settings > Servers > SNMP**.
3. Click the **Download MIB** link.

Configuring for SNMP Management

To configure the RealPresence Group system for SNMP Management:

1. In the web interface, go to **Admin Settings > Servers > SNMP**.
2. Configure these settings on the SNMP screen.

Setting	Description
Enable SNMP	Allows administrators to manage the system remotely using SNMP.
Version1	Enables the use of the SNMPv1 protocol.
Version2c	Enables the use of the SNMPv2c protocol.
Version3	Enables the use of the SNMPv3 protocol. You must select this setting to use the subsequent settings that apply only to SNMPv3.
Read-Only Community	Specifies the SNMP management community in which you want to enable this system. The default community is `public`. **Note:** Polycom does not support SNMP write operations for configuration and provisioning; the read-only community string is used for both read operations and outgoing SNMP traps.
Contact Name	Specifies the name of the person responsible for remote management of this system.
Location Name	Specifies the location of the system.
System Description	Specifies the type of video conferencing device.

Setting	Description
User Name	Specifies the SNMPv3 User Security Model (USM) account name that will be used for SNMPv3 message transactions. The maximum length is 64 characters.
Authentication Algorithm	Specifies the type of SNMPv3 authentication algorithm used: • SHA • MD5
Authentication Password	Specifies the SNMPv3 authentication password. The maximum length is 48 characters.
Privacy Algorithm	Specifies the type of SNMPv3 cryptography privacy algorithm used: • CFB-AES128 • CBC-DES
Privacy Password	Specifies the SNMPv3 privacy (encryption) password. The maximum length is 48 characters.
Engine ID	Specifies the unique ID of the SNMPv3 engine. This setting might be needed for matching the configuration of an SNMP console application. The Engine ID is automatically generated, but you can create your own ID, as long as it's between 10 and 32 hexadecimal digits. Each group of 2 hex digits can be separated by a colon character (:) to form a full 8-bit value. A single hex digit delimited on each side with a colon is equivalent to the same hex digit with a leading zero (therefore, ***:F:*** is equivalent to ***:0f:***). The ID cannot be all zeros or all Fs.
Listening Port	Specifies the port number SNMP uses to listen for messages. The default listening port is 161.
Transport Protocol	Specifies the transport protocol used: • TCP • UDP
Destination Address1 **Destination Address2** **Destination Address3**	Specifies the IP addresses of the computers you intend to use as your network management station and to which SNMP traps will be sent. Each address row has four settings: 1 IP Address (accepts IPv4 and IPv6 addresses, host names, and FQDNs) 2 Message Type (Trap, Inform) 3 SNMP protocol version (v1, v2c, v3) 4 Port (the default is 162) Disabling the checkbox next to the **Port** setting disables the corresponding Destination Address.

Using a Provisioning Service

If your organization uses the Polycom CMA or RealPresence Resource Manager system, you can manage Polycom RealPresence Group systems in dynamic management mode. In dynamic management mode, the following might be true:

- Polycom RealPresence Group systems are registered to a standards-based presence service, so presence states are shared with Contacts.
- Polycom RealPresence Group systems have access to a corporate directory that supports LDAP access.
- The Domain, User Name, Password, and Server Address fields are populated on the Provisioning Service screen.
- Configuration settings that are provisioned, or that are dependent on provisioned values, are read-only on the RealPresence Group system.
- The Polycom RealPresence Group system checks for new software from the Polycom CMA or RealPresence Resource Manager system every time it restarts and at an interval set by the service. It automatically accesses and runs any software updates made available by the Polycom CMA or RealPresence Resource Manager system.
- A CMA or RealPresence Resource Manager system administrator can upload a provisioned bundle from an already configured RealPresence Group system. When RealPresence Group systems request provisioning, the provisioned bundle and any automatic settings are downloaded. A RealPresence Group system user with administrative rights can change the settings on the RealPresence Group system after the provisioned bundle is applied. If you later download a new provisioned bundle from the CMA or RealPresence Resource Manager system, the new bundle overwrites the manual settings.
- If the system has previously registered successfully with a provisioning service but fails to detect the service when it restarts or checks for updates, an alert appears on the System Status screen. If the system loses registration with the provisioning service, it continues operating with the most recent configuration that it received from the provisioning service.
- If a Polycom Touch Control is connected to a provisioned RealPresence Group system, a CMA or RealPresence Resource Manager system with the following software versions can receive status updates from and provide software updates to the Polycom Touch Control.
  - CMA system version 6.2.1 or later
  - RealPresence Resource Manager system version 7.1 or later

Enabling or Disabling the Provisioning Service

You can register the Polycom RealPresence Group system with the Polycom CMA or RealPresence Resource Manager system in several ways:

- If the system detects a provisioning service on the network while running the setup wizard, it prompts you to enter information for registration with the service.

  The setup wizard is available during initial setup, after a system reset with system settings deleted, or after using the restore button. For information about configuring the Polycom CMA or RealPresence Resource Manager system so that Polycom RealPresence Group systems detect and register with it, refer to the *Polycom Unified Communications Deployment Guide for Microsoft Environments*.

- You can enter the registration information and attempt to register by going to the **Admin Settings** in the Polycom RealPresence Group system web interface.

To enable a provisioning service in the Admin Settings:

1. In the web interface, go to **Admin Settings > Servers > Provisioning Service**.
2. Select the **Enable Provisioning** setting.
3. Enter the **Domain**, **User Name**, **Password**, and **Server Address** for automatic provisioning. Multiple Polycom RealPresence Group systems can be registered to a single user.
4. Select **Register** or **Update**. The system tries to register with the Polycom CMA or RealPresence Resource Manager system using NTLM authentication.

To disable a provisioning service:

1. In the web interface, go to **Admin Settings > Servers > Provisioning Service**.
2. Disable the **Enable Provisioning** setting.

Provisioning Service Settings

If automatic provisioning is enabled but the system does not register successfully with the provisioning service, you might need to change the **Domain**, **User Name**, **Password**, or **Server Address** used for registration. For example, users might be required to periodically reset passwords used to log into the network from a computer. If such a network password is also used as the provisioning service password, you must update it on the Polycom RealPresence Group system, too. To avoid unintentionally locking a user out

of network access in this case, RealPresence Group systems will not automatically retry registration until you update the settings and register manually on the Provisioning Service page.

To configure the provisioning service settings:

1. In the web interface, go to **Admin Settings > Servers > Provisioning Service**.
2. Configure these settings.

Setting	Description
Domain	Specifies the domain for registering to the provisioning service.
User Name	Specifies the endpoint's user name for registering to the provisioning service.
Password	Specifies the password that registers the system to the provisioning service.
Server Address	Specifies the address of the Polycom CMA system running the provisioning service.

Keeping your Software Current

You can update your Polycom RealPresence Group system by going to support.polycom.com, navigating to **Documents and Downloads > Telepresence and Video**, and then downloading and installing the appropriate software. You can download and install software for the Polycom Touch Control, with no software or options key codes. You can also download and install Polycom Touch Control software from a web server.

You can also have your system automatically check for and apply software updates.

To automatically check for and apply software updates:

1. In the web interface, go to **Admin Settings > General Settings > Software Updates**.
2. Select **Automatic Software Updates**.

3 Configure these settings.

Setting	Description
Automatically Check for and Apply Software Updates	Enables settings that allow you to set up a schedule for automatically checking for and applying software updates to your system.
Start Time	Specifies the **Hour**, **Minute**, and **AM/PM** setting to start checking for updates.
Duration	Specifies how long the system should wait to determine whether updates are available.

Refer to the *Release Notes for the Polycom RealPresence Group Series* for information about the latest software version, including version dependencies. Refer to *Installing Software and Options for the Polycom RealPresence Group Series and Accessories* for detailed information about obtaining software key codes and updating your software.

If your organization uses a management system for provisioning endpoints, your Polycom RealPresence Group system might get software updates automatically.

9

Control and Navigation

Configuring Remote Control Behavior

You can customize the behavior of the remote control to support the user's environment.

Points to Note about remote control behavior:

- If the Polycom RealPresence Group system is paired and connected with a Polycom Touch Control, the remote control is disabled.
- The Polycom RealPresence Group system remote control IR transmits a modulated frequency of 38 kHz.
- When a USB keyboard is connected to a RealPresence Group system, you can enter only numbers with the remote control on the local interface's **Place a Call** > **Keypad** or **Place a Call** > **Contacts** screens.

To configure remote control behavior:

1. In the web interface, go to **Admin Settings > General Settings > System Settings > Remote Control, Keypad, and Power**.
2. Configure these settings.

Setting	Description
Keypad Audio Confirmation	Specifies whether to play a voice confirmation of numbers selected with the remote control or keypad.
Numeric Keypad Function	Specifies whether pressing number buttons on the remote control or keypad moves the camera to presets or generates touch tones (DTMF tones). If this is set to **Presets**, users can generate DTMF tones by pressing the # key on the remote while on a video screen.

Setting	Description
Use Non-Polycom Remote	Configures the system to accept input from a programmable, non-Polycom remote control. In most cases the Polycom remote works as designed, even when this feature is enabled. However, try disabling this feature if you experience difficulty with the Polycom remote. For more information about Polycom RealPresence Group system IR codes, refer to the *Integrator's Reference Manual for the Polycom RealPresence Group Series*.
Channel ID	Specifies the IR identification channel to which the Polycom RealPresence Group system responds. Set the Channel ID to the same channel as the remote control. The default setting is 3. If the remote control is set to channel 3, it can control a Polycom RealPresence Group system set to any Channel ID. For more information about changing this setting, refer to Configuring the Remote Control Channel ID.
Hang-up Button Long Press	Specifies the behavior of the remote control **Hang-up** button when you press it for a long time: • **Hang-up / Power Off**—Holding down the **Hang-up** button powers off the RealPresence Group system. This option is not available to the RealPresence Group 550 systems. • **Hang-up / Sleep**—Holding down the **Hang-up** button puts the system to sleep. • **Hang-up Only**—Holding down the **Hang-up** button has no function other than hanging up the call.
# Button Function	Specifies the behavior of the **#** button on the remote control: • **#, then @**—Pressing buttons on the keypad displays numbers, then letters. For example, pressing the 5 key once displays the number *5* but pressing it three times displays the letter *K*. • **@, then #**—Pressing buttons on the keypad displays letters, then numbers. For example, pressing the 5 key once displays the letter *J* but pressing it four times displays the number *5*.

Configuring the Remote Control Channel ID

You can configure the Channel ID so that the remote control affects only one Polycom RealPresence Group system, even if other systems are in the same room.

The Polycom Touch Control virtual remote control is always set to channel 3.

If the remote control is set to channel 3, it can control a Polycom RealPresence Group system set to any Channel ID. If the system does not respond to the remote control, set the remote control channel ID to 3 starting with step 3 in the following procedure. Then follow the entire procedure to configure the system and remote control channel ID settings.

While performing the following procedures, blocking the IR signal from the remote control can prevent the signal from being received by the system, causing the system to take an action that corresponds to any of the remote control button presses.

To configure the channel ID on the remote control:

1. While blocking the IR signal from the remote control using your hand or some other object, press and hold and for 2-3 seconds.
2. After the red LED on the remote control comes on, release both keys. The LED remains lit for 10 seconds.
3. While the LED is lit, enter a 2-digit ID between 00 and 15.

   If you do not enter the ID during the 10 seconds the LED is lit, the LED flashes six times and you must repeat steps 1 and 2. Be sure to enter the ID during the next 10-second window.
4. If the channel ID is saved successfully, the LED flashes twice. Otherwise, the LED flashes six times and you must repeat steps 1 - 3.

To confirm the channel ID from the remote control:

1. While blocking the IR signal from the remote control using your hand or some other object, press and hold and for 2-3 seconds.
2. After the LED on the remote control comes on, release both keys. The LED remains lit for 10 seconds.
3. While the LED is lit, enter the 2-digit ID between 00 and 15 that you believe is the channel ID.

   If you do not enter the ID during the 10 seconds the LED is lit, the LED flashes six times and you must repeat steps 1 and 2. Be sure to enter the ID during the next 10-second window.
4. If you entered the current channel ID, the LED flashes twice. Otherwise, the LED flashes six times and allows you to repeat step 3.

To configure the channel ID for a Polycom RealPresence Group system and remote control in the web interface:

1. Go to **Admin Settings > General Settings > System Settings > Remote Control, Keypad, and Power**.
2. Select the **Channel ID**.
3. Click **Save**.

The channel ID must be the same on the remote control and in the web interface.

Connecting Control and Accessibility Equipment

The Polycom RealPresence Group 300 and the Polycom RealPresence Group 500 systems provide one serial port to allow you to control the system through a touch-panel using the API.

The Polycom RealPresence Group 550 systems also provide one serial port, but it's intended for the SDI camera control only.

The Polycom RealPresence Group 700 system also provides one serial port, but depending on your system's capabilities, you might be able to use the RS-232 serial port to control the system through a touch-panel using the API.

Make sure that the system is powered off before you connect devices to it.

Connecting Non-Polycom Touch-Panel Controls

You can connect an AMX or Crestron control panel to a Polycom RealPresence Group system's RS-232 serial port as part of a custom room installation. You will need to program the control panel. Refer to the *Integrator's Reference Manual for the Polycom RealPresence Group Series* for information about the API commands.

Configuring RS-232 Serial Port Settings

1. In the web interface, go to **Admin Settings > General Settings > Serial Ports**.
2. Configure these settings in the sections on the Serial Ports page.

Setting	Description
RS-232 Mode	Specifies the mode used for the serial port. Available settings depend on the Polycom RealPresence Group system model. • **Off** — Disables the serial port. • **Control** — Receives control signals from a touch-panel control. Allows any device connected to the RS-232 port to control the system using API commands. • **Camera control** — Sends control signals to the SDI camera. **Note:** If you have a RealPresence Group 300 or RealPresence Group 500 system, use only the Polycom serial cable with part number 2457-63542-001 to connect devices to the RS-232 serial port.
Baud Rate, Parity, Data Bits, Stop Bits	Set these to the same values that they are set to on the serial device.
RS-232 Flow Control	This setting works with RS-232 modes that are not currently available. The setting is not currently configurable.

Setting Up the Polycom Touch Control

The Polycom Touch Control allows you to control a Polycom RealPresence Group system.

Follow these steps to get started with the Polycom Touch Control. Refer to the *Setting Up the Polycom Touch Control* and *Installing Software and Options for the Polycom RealPresence Group Series and Accessories* documents for more information.

To set up the Polycom Touch Control Device:

1. Ensure that the correct software is installed on the Polycom RealPresence Group system that you want to control, and that you have completed the setup wizard on the system.

   Refer to *Installing Software and Options for the Polycom RealPresence Group Series and Accessories* for more information about updating the Polycom Touch Control software.

2. Connect the Ethernet cable to the underside of the Polycom Touch Control.

3. If you intend to use the Polycom Touch Control to show content from a computer, connect the USB cable to the underside of the Polycom Touch Control.

4. If you want to connect the stand, route the Ethernet and USB cables through the opening in the stand. Then attach the stand to the Polycom Touch Control by tightening the mounting screw with a screwdriver.

5. Plug the Ethernet cable into the wall outlet:

   - If your room provides Power Over Ethernet, you can connect the Ethernet cable directly to a LAN outlet.
   - If your room does not provide Power Over Ethernet, you must connect the Ethernet cable to the power supply adapter. Then connect the power supply adapter to a LAN outlet and power outlet.

   The Polycom Touch Control powers on and displays the language selection screen.

6. Choose your language and follow the onscreen instructions to pair the Polycom Touch Control with your RealPresence Group system, or select **Pair Later** on the Pairing screen to skip pairing.

7. After the Polycom Touch Control connects to the network, enter the RealPresence Group system IP address and touch **Connect**. By default, the IP address of the RealPresence Group system is displayed on the bottom of its Home screen. If the RealPresence Group system is configured to allow pairing and you enter the IP address for the system correctly, the Touch Control displays a prompt for the Polycom RealPresence Group system admin user ID and password.

   When the Polycom Touch Control has paired and connected with the RealPresence Group system, the Polycom Touch Control displays a success message, and the menus on the RealPresence Group system monitor become unavailable. For more information about pairing, refer to Pairing on page 160.

Pairing and Unpairing a Polycom Touch Control Device and a Polycom RealPresence Group System

When you configure the Polycom Touch Control to pair with a particular Polycom RealPresence Group system, the Polycom Touch Control makes an IP connection to the RealPresence Group system. If the connection is lost for any reason, the Polycom Touch Control automatically attempts to restore the connection.

The Polycom Touch Control connects to the RealPresence Group system over a TLS socket, providing a reliable, secure communication channel between the two systems. The Polycom Touch Control initiates all pairing connections and attaches to port 4122 on the RealPresence Group system.

You can pair the Polycom Touch Control and Polycom RealPresence Group system during initial Polycom Touch Control setup, as described in the steps on the previous page.

After you have completed Polycom Touch Control setup, you can pair to a different RealPresence Group system using Polycom Touch Control settings and unpair using the web interface.

When you use a Polycom Touch Control with the Polycom RealPresence Group system, you must be sure to update the RealPresence Group software before you update the Polycom Touch Control software. Only Polycom Touch Control software versions 4.x or later work with Polycom RealPresence Group systems.

The following table describes the pairing states:

State	Description
Paired	The Polycom Touch Control is successfully connected to the Polycom RealPresence Group system through the pairing process, including providing the Polycom RealPresence Group admin ID and password. A single Polycom Touch Control can be paired to multiple Polycom RealPresence Group systems and, once paired, the Polycom Touch Control can switch between RealPresence Group systems without needing to enter admin IDs or passwords.
Unpaired	The ability to pair or connect to the Polycom Touch Control is disabled on the Polycom RealPresence Group system. The only way to unpair is to follow the procedure described in Unpairing on page 161.

State	Description
Connected	A Polycom Touch Control has an active pairing connection to the Polycom RealPresence Group system. A single Polycom Touch Control can be paired to multiple Polycom RealPresence Group systems, but can be connected to only one RealPresence Group system at a time.
Disconnected	The Polycom Touch Control does not have an active pairing connection to an RealPresence Group system, but is still paired if at least one RealPresence Group system that has previously paired with the Polycom Touch Control has not unpaired.

Pairing

To pair the Polycom Touch Control and Polycom RealPresence Group system during setup:

>> After selecting a language, enter the RealPresence Group system IP address in the Polycom Touch Control interface and touch **Connect**.

If you do not want to pair during setup, select **Pair Later**. If you choose to skip pairing, many Polycom Touch Control features are not available. You can pair at a later time.

To pair the Polycom Touch Control and Polycom RealPresence Group system after setup, using the Polycom Touch Control:

1. On the Polycom Touch Control Home screen, touch **System**.
2. Scroll to **Device Connection Status** and then touch Info next to the RealPresence Group system.
3. Touch **View Pairing Settings**.
4. Change the RealPresence Group system IP address and touch **Connect**.

To pair the Polycom Touch Control and Polycom RealPresence Group system after setup, using the Polycom RealPresence Group system web interface:

1. Go to **Admin Settings > General Settings > Pairing > Polycom Touch Control**.
2. Enable the **Enable Polycom Touch Control** setting.

After the RealPresence Group system and the Polycom Touch Control are paired, the Polycom RealPresence Group system web interface and the Polycom Touch Control interface display information about each other and about their connection status.

Unpairing

You can unpair the Polycom Touch Control and RealPresence Group system using the web interface.

To unpair the Polycom Touch Control and Polycom RealPresence Group using the web interface:

1. Go to **Admin Settings > General Settings > Pairing > Polycom Touch Control**.
2. Disable **Allow Pairing** or select **Forget this Device**.

   The RealPresence Group system cannot pair with any Polycom Touch Control while **Allow Pairing** is disabled**.**

Remote Management of the Polycom Touch Control

You can remotely manage certain features of your Polycom Touch Control from within your enterprise environment using Microsoft Internet Explorer version 8 and later or Mozilla FireFox version 3.6 and later. These features are described in the following paragraphs.

To open the remote management window for the Touch Control:

1. In one of the supported web browser windows, enter the IP address of the Touch Control.
2. In the Login window, enter the **ID** and **Password** you use to access the administrative features of the Touch Control.

   You can access the remote management features by using the **Dashboard** or the **Navigation** menu. You return to the **Dashboard** by clicking the Home icon.

Download Logs

Downloads the Touch Control logs to the location specified in the device.

Network Settings

Specifies whether the system acquires an IP address automatically or manually. With the manual method, the other settings that are available from the Touch Control become available on the web.

Pairing

Pairs and unpairs from Polycom RealPresence Group systems. Before you can connect to or pair with a device, you must know the device's IP Address and the User Name and Password used to connect.

Security

Changes the Admin ID and Password of the Touch Control.

Software Updates

Updates the Polycom Touch Control software. You can update from the default Polycom server or your own server by entering the appropriate IP address. You can configure the updates to occur automatically or manually.

View Touch Control Screens

Shows the screen currently being displayed on the Polycom Touch Control. You can click **Refresh** at any time to see if the screen has changed.

SmartPairing

SmartPairing allows you to detect and pair a RealPresence Group system from the RealPresence Mobile application on an Android or Apple iPad tablet. After you pair the application and the RealPresence Group system, you can use the RealPresence Mobile application to perform two basic functions:

- Use the application as a remote control for the RealPresence Group system.
- Swipe to transfer a call from the RealPresence Mobile application to the RealPresence Group system.

To configure SmartPairing:

1 In the web interface, go to **Admin Settings > General Settings > Pairing > SmartPairing**.

2 Configure these settings.

Setting	Description
SmartPairing Mode	Specifies the method used to pair with the RealPresence Group system, if SmartPairing is enabled: • **Disabled** • **Automatic** • **Manual**
Signal Volume	Specifies the relative signal strength of the ultrasonic signal within the loudspeaker audio output signal.

Each paired device is displayed in **Diagnostics** > **System** > **Sessions**.

Configuring Contact Information

You can configure contact information for your Polycom RealPresence Group system so that others know who to call when they need assistance.

To configure system contact information:

1 In the web interface, go to **Admin Settings > General Settings > My Information > Contact Information**.

2 Configure these settings.

Setting	Description
Contact Person	Specifies the name of the system administrator.
Contact Number	Specifies the phone number for the system administrator.
Contact Email	Specifies the email address for the system administrator.
Contact Fax	Specifies the fax number for the system administrator.
Tech Support	Specifies the name of the person who provides technical support.
City	Specifies the city where the system administrator is located.

Setting	Description
State/Province	Specifies the state or province where the system administrator is located.
Country	Specifies the country where the system administrator is located.

Configuring Regional Settings

You can configure regional settings for the Polycom RealPresence Group systems and for Polycom Touch Control devices. To do so, refer to Configuring Polycom RealPresence Group System Location Settings and Configuring Polycom Touch Control Regional Settings on page 167.

Configuring Polycom RealPresence Group System Location Settings

To configure location settings:

1. In the web interface, go to **Admin Settings > General Settings > My Information > Location**.
2. Configure these settings.

Setting	Description
Country	Specifies the country where the system is located. Changing the country automatically adjusts the country code associated with your system.
Country Code	Displays the country code associated with the country where the system is located.

Configuring Polycom RealPresence Group System Language Settings

To configure the Polycom RealPresence Group system language settings:

>> Do one of the following:

- In the local interface, go to **Settings > Administration > Location > Language** and select the language to use in the interface.

- In the web interface, go to **Admin Settings > General Settings > Language** and select the **System Language** to use in the interface.

Configuring Polycom RealPresence Group System Date and Time Settings

To configure the Polycom RealPresence Group system date and time settings:

1. Go to one of the following locations to configure these settings:
   - In the local interface, go to **Settings > Administration > Location > Date and Time**.
   - In the web interface, go to **Admin Settings > General Settings > Date and Time > System Time**.
2. Configure these settings.

Setting	Description
Date Format	Specifies how the date is displayed in the interface. **Note:** This a web-only setting.
Time Format	Specifies how the time is displayed in the interface.
Auto Adjust for Daylight Saving Time	Specifies the daylight saving time setting. When you enable this setting, the system clock automatically changes for daylight saving time. **Note:** This a web-only setting.
Time Zone	Specifies the time difference between GMT (Greenwich Mean Time) and your location.
Time Server	Specifies whether the connection to a time server is automatic or manual for system time settings. You can also select **Off** to enter the date and time yourself.
Primary Time Server Address	Specifies the address of the primary time server to use when **Time Server** is set to **Manual**.
Secondary Time Server Address	Specifies the address of the time server to use when the **Primary Time Server Address** does not respond. This is an optional field.
Current Date and Current Time	• If the **Time Server** is set to **Manual** or **Auto**, these settings are not displayed. • If the **Time Server** is set to **Off**, these settings are configurable.

3 In the web interface, go to **Admin Settings > General Settings > Date and Time > Time in Call**.

4 Configure these settings.

Setting	Description
Show Time in Call	Specifies the time display in a call: • **Elapsed Time**—Displays the amount of time in the call. • **System Time**—Displays the system time on the screen during a call. • **Off**—Time is not displayed.
When to Show	Specifies when the time should be shown: • **Start of the call only**—Displays only when the call begins • **Entire call**—Displays continuously throughout the call • **Once per hour**—Displays at the beginning of the hour for one minute • **Twice per hour**—Displays at the beginning of the hour and midway through the hour for one minute
Show Countdown Before Next Meeting	This setting is displayed only when the calendaring service has been enabled. When enabled, it displays a timer that counts down to the next scheduled meeting 10 minutes before that meeting. If a timer is already showing, the countdown timer replaces it 10 minutes before the next scheduled meeting.

Configuring Polycom Touch Control Regional Settings

To configure the Polycom Touch Control regional settings:

1 From the Home screen touch **Administration.**

2 Touch the **Location** tab.

3 Select a language from the **Language** menu.

4 Configure the following settings under **Date and Time**.

Setting	Description
Time Zone	Specifies the time difference between GMT (Greenwich Mean Time) and your location.
Time Server	Specifies connection to a time server for automatic Touch Control time settings. The date and time must be manually reset every time the Touch Control restarts, in the following cases: • **Time Server** is set to **Off**. • **Time Server** is set to **Manual** or **Auto**, but the Touch Control cannot connect to a time server successfully.
Time Server Address	Specifies the address of the time server to use when **Time Server** is set to **Manual**.
Time Format	Specifies your format preference for the time display and lets you enter your local time.

Configuring Sleep Settings

Customizing Sleep Behavior

To configure when the system goes to sleep:

1. In the web interface, click **Admin Settings > Audio/Video > Sleep > Sleep**.
2. Select the number of minutes the system can be idle before it goes to sleep.

10

Diagnostics, Status, and Utilities

The Polycom RealPresence Group systems provide various screens that allow you to review information about calls made by the system, review network usage and performance, perform audio and video tests, and send system messages.

Diagnostics Screens

Use the system diagnostics screens to view call statistics, system status, and system log settings, as well as download system logs and restart or reset the system.

Local Interface System Screens

Most diagnostic information is available in both the web and the local interface, but some of this information is specific to one or the other interface. Read this section to learn how to find diagnostic information in the local interface.

To access the Diagnostics screens on the local interface:

>> Go to **Settings > System Information.**

The local interface's System Information screen has the following choices:

- Information
- Status
- Diagnostics
- Call Statistics

Information

Diagnostic Screen	Description
System Detail	Displays the following system information: • System Name • Model • Hardware Version • System Software • Serial Number • MAC Address • IP Address
Network	Displays the following network information: • IP Address • Host Name • H.323 Name • H.323 Extension (E.164) • SIP Address • Link-Local • Site-Local • Global Address
Usage	Displays the following usage information: • Time in Last Call • Total Time in Calls • Total Number of Calls

Status

Diagnostic Screen	Description
Active Alerts	Displays the status of any device or service listed within the Status screens that has a current status indicator of red. Alerts are listed in the order they occurred.
Call Control	Displays the status of the Auto-Answer Point-to-Point Video and Meeting Password settings.
Audio	Displays the connection status of audio devices such as the microphones, SoundStation IP, and SoundStructure.
EagleEye Director	Displays the connection status of the EagleEye™ Director, if one is connected. If the camera system is not connected or is not selected as the current camera source, this choice is not visible on the screen.
LAN	Displays the connection status of the IP Network.

Diagnostic Screen	Description
Servers	• Always displays the Gatekeeper and SIP Registrar Server. • Displays the active Global Directory Server, LDAP Server, or Microsoft Server. • If enabled, displays the Provisioning Service, Calendaring Service, or Presence Service.
Log Management	Displays the status of the Log Threshold setting. When a system device or service encounters a problem, you see an alert next to the **System** button on the menu.

Diagnostics

Diagnostic Screen	Description
Near End Loop	Tests the internal audio encoders and decoders, the external microphones and speakers, the internal video encoders and decoders, and the external cameras and monitors. Monitor 1 displays the video and plays the audio that would be sent to the far site in a call. This test is not available when you are in a call.
PING	Tests whether the system can establish contact with a far-site IP address that you specify. PING returns abbreviated Internet Control Message Protocol results. It returns H.323 information only if the far site is configured for H.323. It returns SIP information only if the far site is configured for SIP. If the test is successful, the Polycom RealPresence Group system displays a message
Trace Route	Tests the routing path between the local system and the IP address entered. If the test is successful, the Polycom RealPresence Group system lists the hops between the system and the IP address you entered.
Color Bars	Tests the color settings of your monitor for optimum picture quality. If the color bars generated during the test are not clear, or the colors do not look correct, the monitor needs to be adjusted.
Speaker Test	Tests the audio cable connections. A 473 Hz audio tone indicates that the local audio connections are correct. If you run the test from the system during a call, the far site will also hear the tone. If you run the test from the Polycom RealPresence Group system web interface during a call, the people at the site you are testing will hear the tone, but you will not.

Diagnostic Screen	Description
Audio Meter	Measures the strength of audio signals from the microphone or microphones, far-site audio, VCR audio, and any device connected to the audio line in. • To check the microphone or microphones, speak into the microphone. • To check far-site audio, ask a participant at the far site to speak or call a phone in the far-site room to hear it ring. The Audio Meters indicate peak signal levels. Set signal levels so that you see peaks between +3dB and +7dB with normal speech and program material. Occasional peaks of +12dB to +16dB with loud transient noises are considered acceptable. A meter reading of +20dB corresponds to 0dBFS in the Polycom RealPresence Group system audio. A signal at this level is likely clipping the audio system. Meters function only when the associated input is enabled. **Note:** Some audio meters are unavailable when a SoundStructure digital mixer is connected to the Polycom RealPresence Group system.
Camera Tracking	Provides diagnostics specific to the EagleEye Director. **Audio** Verifies microphone functionality. To use this feature, speak aloud and verify that you can see dynamic signal indications for two vertical microphones and five horizontal microphones. If no signal indication appears for a specific microphone, manually power off the EagleEye Director and then power it back on. Also verifies the reference audio signal: Set up a video call. Let the far side speak aloud and verify that you can see dynamic signal indications for the two reference audio meters. If no signal indication appears for a specific microphone, make sure the reference cable is connected firmly. After you verify microphone functionality, calibrate the camera again. **Video** • **Left Camera** shows video from the left camera. • **Right Camera** shows video from the right camera. • **Color Bars** displays the color bar test screen. **Note:** If the EagleEye Director is connected but is not selected as the current camera source, this choice is not visible on the screen.

Diagnostic Screen	Description
Sessions	Displays the following information about each session connected to the system: • Type • User ID • Remote Address
Reset System	**Note:** If a room password is configured for the admin account, you must enter it to reset the system. Returns the system to its default settings. When you select this setting using the remote control, you have the option to do the following: • Keep your system settings (such as system name and network configuration) or restore system settings. • Keep or delete the directory stored on the system. System reset does not affect the global directory. • Keep or delete all PKI certificates and certificate revocation lists (CRLs). You might want to download the CDR and CDR archive before you reset the system. Refer to Call Detail Report (CDR) on page 180.

Statistics

Call statistics are displayed in one format when you are in point-to-point calls and another when you are in multipoint calls.

Point-to-Point Calls

Streams associated with the participant are displayed beneath the participant information. To view more information about a specific stream, navigate to the desired stream and select **More Information**.

Multipoint Calls

A list of participants in the call is displayed. Do one of the following:

- To view a participant's details, select **Participants**, navigate to the desired participant, and select **More Information**. The participants' active streams are displayed beneath the participant information. To view more information about a specific stream, navigate to the desired stream and select **More Information**.
- To quickly access information about a particular stream or streams associated with a particular user, navigate to **Streams** for calls using Advanced Video Coding (AVC) or **Participant Streams** for calls using Scalable Video Coding (SVC)**.** Use the **Back** and **Next Participant** buttons to navigate to the participant with the stream or streams you want to view. Navigate to the desired stream and select **More Information**.
- To quickly access a list of all active audio, video, and content streams within the call, navigate to **Active Streams** (this option is available in SVC calls only). Select the desired stream, and select **More Information**.

Web Interface Diagnostics Screens

Most diagnostic information is available in both the web and the local interface, but some of this information is specific to one or the other interface. Read this section to learn how to find diagnostic information in the web interface.

If an EagleEye Director camera system is connected to your RealPresence Group system but is not selected as the current camera source, the Diagnostics selection is not available in the left navigation panel. To view the Diagnostics selection, ensure that the EagleEye Director is selected as the current camera source.

To access the Diagnostics screens using the Polycom RealPresence Group system web interface:

1. In your web browser address line, enter the RealPresence Group system's IP address.
2. Enter the Admin ID as the user name (default is `admin`), and enter the Admin Remote Access Password, if one is set.
3. Click **Diagnostics** from any page in the web interface.

You can find some system information by clicking the **System** link in the blue bar at the top of the page.

The web interface's Diagnostics page has the following groups of settings in addition to the Send a Message application:

- System
- Audio and Video Tests

System Diagnostics

Diagnostic Screen	Description
Call Statistics	Displays information about the call in progress. What you see depends on whether you are in a point-to-point or multipoint call. • **Point-point calls:** Streams associated with the participant are displayed beneath the participant information. To view more information about a specific stream, navigate to the desired stream and select **More Info**. From an individual stream view you can select **Next Stream** to view the next stream in the stream list. • **Multipoint calls:** A list of participants in the call is displayed. Do one of the following: – To view a participant's details, select **Participants**, navigate to the desired participant, and select **More Info**. – The participants' active streams are displayed beneath the participant information. To view more information about a specific stream, navigate to the desired stream and select **More Info**. From an individual stream view you can select **Next Stream** to view the next stream in the stream list. – To quickly access a list of all active audio, video and content streams within the call, navigate to **Active Streams** (this option is available in SVC calls only). Select the desired stream, and select **More Info**. If the system is not in a call, the page displays **The System is not currently in a call.**
System Status	Displays the following system status information: • Auto-Answer Point-to-Point Video, Remote Control, and Meeting Password • Microphones, SoundStation IP, SoundStructure • IP Network • Servers: – Always shows: Gatekeeper, SIP Registrar Server – Shows the active Global Directory Server, LDAP Server, or Microsoft Server – If enabled, shows Provisioning Service, Calendaring Service, Presence Service If the Polycom RealPresence Group system detects an EagleEye Director, a status line for the device is displayed.
Download Logs	Enables you to save system log information.
System Log Settings	• Specifies the Log Level to use. • Enables Remote Logging, H.323 Trace, and SIP Trace. • Specifies the Remote Log Server Address. • Allows you to Send Diagnostics and Usage Data to Polycom, and get information about the Polycom Improvement Program.
Restart System	Instructs the system to restart (system reboot).
Sessions	View information about everyone logged in to the RealPresence Group system.

The following table describes the information you see when you click **More Info** on the Call Statistics page.

Call Statistics "More Info"
Participant information • System name • System number • System information • Call speed (send and receive) • Call type • Encryption **Participant streams** • Stream ID; possible stream IDs include Audio TX, Audio RX, Video TX, Video RX, Content TX, and Content RX • Stream quality indicator; possible colors are green, yellow, and red. • Protocol in use • Format in use • Data rate in use • Frame rate in use • Number of packets lost and percentage packet loss in IP calls • Jitter in IP calls • Encryption type, key exchange algorithm type, and key exchange check code (if the encryption option is enabled and the call is encrypted) • Error concealment type, such as lost packet recovery (LPR), retransmission, or dynamic bandwidth allocation (DBA)

Viewing Call Statistics Using the Polycom Touch Control

Call statistics are also available during a call when your system is paired with the Touch Control.

To view information about a point-to-point call in progress:

1. Touch **Participants**.

   Participant information is displayed.

2. Touch **View Call Statistics**.

   Streams associated with the participant are displayed beneath the participant information. To view more information about a specific stream, navigate to the desired stream and touch . From an individual stream view you can touch **Next Stream** to view the next stream in the list.

To view information about a multipoint call in progress:

1 Touch **Participants**.

A list of participants in the call is displayed.

2 Touch **View Call Statistics** and do one of the following:

- To view a participant's details, navigate to the desired participant, and touch .
- The participants' active streams are displayed beneath the participant information. To view more information about a specific stream, navigate to the desired stream and touch . From an individual stream view you can select **Next Stream** to view the next stream in the stream list.
- To quickly access a list of all active audio, video, and content streams within the call, navigate to **Active Streams** (this option is available in SVC calls only). Select the desired stream, and touch .

Audio and Video Tests

Diagnostic Screen	Description
Speaker Test	Tests the audio cable connections. A 473 Hz audio tone indicates that the local audio connections are correct. If you run the test from the system during a call, the far site will also hear the tone. If you run the test from the Polycom RealPresence Group system web interface during a call, the people at the site you are testing will hear the tone, but you will not.
Audio Meter	Measures the strength of audio signals from the microphone or microphones, far-site audio, VCR audio, and any device connected to the audio line in. • To check the microphone or microphones, speak into the microphone. • To check far-site audio, ask a participant at the far site to speak or call a phone in the far-site room to hear it ring. The Audio Meters indicate peak signal levels. Set signal levels so that you see peaks between +3dB and +7dB with normal speech and program material. Occasional peaks of +12dB to +16dB with loud transient noises are considered acceptable. A meter reading of +20dB corresponds to 0dBFS in the Polycom RealPresence Group system audio. A signal at this level is likely clipping the audio system. Meters function only when the associated input is enabled. **Note:** Some audio meters are unavailable when a SoundStructure digital mixer is connected to the Polycom RealPresence Group system.

Diagnostic Screen	Description
Camera Tracking	Provides diagnostics specific to the EagleEye Director. **Audio** Verifies microphone functionality. To use this feature, speak aloud and verify that you can see dynamic signal indications for two vertical microphones and five horizontal microphones. If no signal indication appears for a specific microphone, manually power off the EagleEye Director and then power it back on. Also verifies the reference audio signal: Set up a video call. Let the far side speak aloud and verify that you can see dynamic signal indications for the two reference audio meters. If no signal indication appears for a specific microphone, make sure the reference cable is connected firmly. After you verify microphone functionality, calibrate the camera again. **Video** • **Left Camera** shows video from the left camera. • **Right Camera** shows video from the right camera. • **Color Bars** displays the color bar test screen. **Note:** If the EagleEye Director is connected but is not selected as the current camera source, this choice is not visible on the screen.

System Logs

You can use the Polycom RealPresence Group system web interface to download system logs. For information about downloading logs, refer to Setting up Log Management on page 135.

You can also manage Polycom Touch Control log files from the Touch Control interface. For more information about Polycom Touch Control log management, refer to Managing Polycom Touch Control Logs on page 136.

Downloading System Logs

The support information package contains logs, configuration settings, and other diagnostic information.

To download a system log using the web interface:

1. Click **Diagnostics > System > Download Logs**.
2. Click **Download system log** and then specify a location on your computer to save the file.

In the dialog boxes that appear, designate where you want the file to be saved.

System Log Settings

To configure system log settings using the web interface:

1. In your web browser address line, enter the RealPresence Group system's IP address.
2. Enter the Admin ID as the user name (default is `admin`), and enter the Admin Remote Access Password, if one is set.
3. Click **Diagnostics > System > System Log Settings**.
4. Configure these settings.

Setting	Description
Log Level	Sets the minimum log level of messages stored in the Polycom RealPresence Group system's flash memory. DEBUG logs all messages. WARNING logs the fewest number of messages. Polycom recommends leaving this setting at the default value of `DEBUG`.
Enable Remote Logging	Specifies whether remote logging is enabled. Enabling this setting causes the Polycom RealPresence Group system to send each log message to the specified server in addition to logging it locally. The system immediately begins forwarding its log messages when you click **Save**. Encryption is not supported for remote logging, so Polycom recommends remote logging only for secure, local networks.
Enable H.323 Trace	Logs additional H.323 connectivity information.
Enable SIP Trace	Logs additional SIP connectivity information.
Send Diagnostics and Usage Data to Polycom	Sends crash log server information to Polycom to help us analyze and improve the product. Click the **Polycom Improvement Program** button to view information about how your data is used.

Downloading EagleEye Director Logs

The Polycom EagleEye Director logs contain important status and debug information that is not included in the logs available for the RealPresence Group system.

Follow these steps to download the log information to a USB device:

1. Attach a USB storage device formatted in FAT32 to the back panel of the EagleEye Director.
2. Restart the EagleEye Director by following these steps:
   a. Unplug the 12v adaptor attached to the side of the EagleEye Director.
   b. Wait a 5 seconds.
   c. Plug the 12v adaptor into the side of the EagleEye Director.

      It could take up to two minutes for the EagleEye Director to restart.
3. Remove the USB storage device.

   A log file using the name format of `rabbiteye_info_`*`XXXXX`*`.tar.gz` is generated on the USB storage device.

Call Detail Report (CDR)

When enabled by going to **Admin Settings > General Settings > System Settings > Recent Calls** in the Polycom RealPresence Group system web interface, the Call Detail Report (CDR) provides the system's call history. Within 5 minutes after ending a call, the CDR is written to memory and then you can download the data in CSV format for sorting and formatting.

Every call is added to the CDR, whether it is made or received. If a call does not connect, the report shows the reason. In multipoint calls, each far site is shown as a separate call, but all have the same conference number.

The size of a CDR is virtually unlimited, but can become unmanageable if you don't download the record periodically. If you consider that 150 calls result in a CDR of approximately 50 KB, you might set up a schedule to download and save the CDR after about every 1000 - 2000 calls just to keep the file easy to download and view. Remember that your connection speed also affects how fast the CDR downloads.

To view and download the CDR using the Polycom RealPresence Group system web interface:

1. Click **Utilities > Services > Call Detail Report (CDR)** to view the details of the file.
2. Click **Most Recent Call Report** and then specify whether to open or save the file on your computer.

Information in the CDR

The following table describes the data fields in the CDR.

Data	Description
Row ID	Each call is logged on the first available row. A call is a connection to a single site, so there might be more than one call in a conference.
Start Date	The call start date, in the format dd-mm-yyyy.
Start Time	The call start time, in the 24-hour format hh:mm:ss.
End Date	The call end date.
End Time	The call end time.
Call Duration	The length of the call.
Account Number	If Require Account Number to Dial is enabled on the system, the value entered by the user is displayed in this field.
Remote System Name	The far site's system name.
Call Number 1	The number dialed from the first call field, not necessarily the transport address. For incoming calls — The caller ID information from the first number received from a far site.
Call Number 2 (If applicable for call)	For outgoing calls — The number dialed from the second call field, not necessarily the transport address. For incoming calls — The caller ID information from the second number received from a far site.
Transport Type	The type of call — Either H.323 (IP) or SIP.
Call Rate	The bandwidth negotiated with the far site.
System Manufacturer	The name of the system manufacturer, model, and software version, if they can be determined.
Call Direction	In — For calls received. Out — For calls placed from the system.
Conference ID	A number given to each conference. A conference can include more than one far site, so there might be more than one row with the same conference ID.
Call ID	Identifies individual calls within the same conference.
Total H.320 Channels Used	Number of narrow-band channels used in the call.

Data	Description
Endpoint Alias	The alias of the far site.
Endpoint Additional Alias	An additional alias of the far site.
View Name	Names the web or local interface used in the call.
User ID	Lists the ID of the user who made the call.
Endpoint Transport Address	The actual address of the far site (not necessarily the address dialed).
Audio Protocol (Tx)	The audio protocol transmitted to the far site, such as G.728 or G.722.1.
Audio Protocol (Rx)	The audio protocol received from the far site, such as G.728 or G.722.
Video Protocol (Tx)	The video protocol transmitted to the far site, such as H.263 or H.264.
Video Protocol (Rx)	The video protocol received from the far site, such as H.261 or H.263.
Video Format (Tx)	The video format transmitted to the far site, such as CIF or SIF.
Video Format (Rx)	The video format received from the far site, such as CIF or SIF.
Disconnect Local ID and Disconnect Reason	The identity of the user who initiated the call and the reason the call was disconnected.
Q.850 Cause Code	The Q.850 cause code showing how the call ended.
Total H.320 Errors	The number of H.320 errors experienced during the call.
Average Percent of Packet Loss (Tx)	The combined average of the percentage of both audio and video packets transmitted that were lost during the 5 seconds preceding the moment at which a sample was taken. This value does not report a cumulative average for the entire H.323 call. However, it does report an average of the sampled values.
Average Percent of Packet Loss (Rx)	The combined average of the percentage of both audio and video packets received that were lost during the 5 seconds preceding the moment at which a sample was taken. This value does not report a cumulative average for the entire H.323 call. However, it does report an average of the sampled values.
Average Packets Lost (Tx)	The number of packets transmitted that were lost during an H.323 call.

Data	Description
Average Packets Lost (Rx)	The number of packets from the far site that were lost during an H.323 call.
Average Latency (Tx)	The average latency of packets transmitted during an H.323 call based on round-trip delay, calculated from sample tests done once per minute.
Average Latency (Rx)	The average latency of packets received during an H.323 call based on round-trip delay, calculated from sample tests done once per minute.
Maximum Latency (Tx)	The maximum latency for packets transmitted during an H.323 call based on round-trip delay, calculated from sample tests done once per minute.
Maximum Latency (Rx)	The maximum latency for packets received during an H.323 call based on round-trip delay, calculated from sample tests done once per minute.
Average Jitter (Tx)	The average jitter of packets transmitted during an H.323 call, calculated from sample tests done once per minute.
Average Jitter (Rx)	The average jitter of packets received during an H.323 call, calculated from sample tests done once per minute.
Maximum Jitter (Tx)	The maximum jitter of packets transmitted during an H.323 call, calculated from sample tests done once per minute.
Maximum Jitter (Rx)	The maximum jitter of packets received during an H.323 call, calculated from sample tests done once per minute.
Call Priority	The AS-SIP call precedence level assigned to the call (populated only when AS-SIP is enabled on the system).

When the Polycom RealPresence Group system is paired with a Polycom Touch Control, the screen saver logo displays on the system's monitor but not the Polycom Touch Control screen.

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Troubleshooting

For more troubleshooting information, you can search the Knowledge Base at support.polycom.com.

Placing a Test Call

When you finish configuring the system, you can call a Polycom video site to test your setup. You can find a list of worldwide numbers that you can use to test your Polycom RealPresence Group system at www.polycom.com/videotest.

If you have trouble making video calls:

- To find out if the problem exists in your system, ask the person you were trying to reach to call you instead.
- Find out if the system you are calling has its power turned on and is functioning properly.
- If you can make calls but not receive them, make sure that your system is configured with the correct IP address.

Resetting a RealPresence Group System

If the system is not functioning correctly or you have forgotten the Admin Room Password, you can reset the system with **Delete System Settings** enabled. This procedure effectively refreshes your system, deleting all settings except the following one:

- Current software version
- Remote control channel ID setting
- Directory entries
- CDR data and logs

To reset the system using the local interface:

1. Go to **Settings > System Information > Diagnostics > Reset System**.
2. Enable **Delete System Settings**.
3. Click **Reset System**.

After about 15 seconds, the system restarts and displays the setup wizard.

Performing a Factory Restore on the Polycom RealPresence Group System

You can use the hardware restore button on the Polycom RealPresence Group system to perform a factory restore of the system. A factory restore completely erases the system and restores it to the software version and default configuration stored in its factory partition.

The factory restore operation completely erases the system's flash memory and reinstalls the software version and default configuration stored in its factory partition.

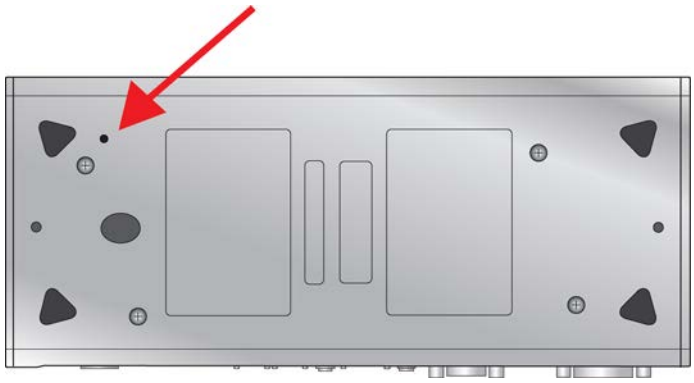
The following items are *not* saved:

- Software updates
- All system settings including option keys and the remote control channel ID
- Directory entries
- CDR data

During a factory restore on the system or from a USB device, the LED indicator on the front of the system blinks blue and amber.

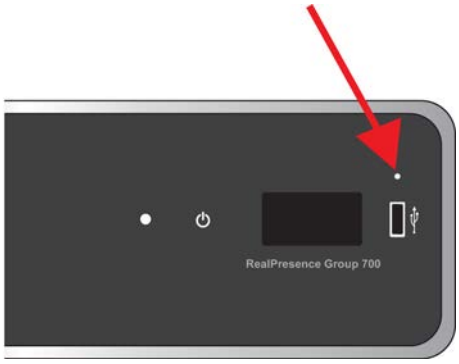
Using the Restore Button for a Factory Restore

The restore button is on the bottom of the Polycom RealPresence Group 300 and 500 systems, as shown in the following figure.



The restore button is on the front of the Polycom RealPresence Group 550 systems, as shown in the following figure.

The restore button is on the front of the Polycom RealPresence Group 700 system, as shown in the following figure.



To reset the system to its factory partition software using the restore button:

1. While the system is powered off, press and hold the restore button.
2. While holding the restore button, press the power button once.
3. Keep holding the restore button for 10 more seconds, then release it.

During the factory restore process, the system displays the Polycom startup screen and the usual software update screens on HDMI monitors. Other types of monitors will be blank. Do not power off the system during the factory restore process. The system restarts automatically when the process is complete.

Using a USB Device for a Factory Restore

If you start a factory restore while a USB storage device is connected, the system restores from the USB device instead of the system's factory partition.

For about the first five minutes of the factory restore process, the system is erasing data on the SD card and extracting data from the USB device. This process runs from a special memory partition and graphics are not available, so your monitor will be blank.

If you prefer, you can have the system prepare the SD card by rewriting the data with zeroes and reformatting the card, thereby eliminating any traces of old data. Be aware that this step adds about 20 minutes to the beginning of the factory restore process, when all you will see is a blank screen. You will notice, however, that the LED indicator shows a fast blink of blue and amber lights during this process. The lights blink normally during the rest of the restore process.

To reset the system to its factory partition software using a USB device:

1. Copy the build package (`.tar` file) and the `sw_keys.txt` file to the root directory of a USB device.
2. (Optional) Create a text file named `zeroize.txt` on the root directory of the USB device, then edit the file by entering the word `TRUE` in all capital letters.

   If the `zeroize.txt` file contains the word FALSE, or if the file is not in the root directory of the USB device, the system uses the standard method of erasing data from the SD card.
3. Power down the system and plug the USB device into your system.
4. While holding the restore button, press the power button once.
5. Keep holding the restore button for 10 more seconds, then release it.

   The software version of the update file on the USB device is displayed in the web interface.
6. Click **Start Update** to begin the factory restore.

After the SD card is prepared, the system displays the Polycom startup screen and the usual software update screens on HDMI monitors. Other types of monitors will be blank. Do not power off the system during the factory restore process. The system restarts automatically when the process is complete.

Deleting Files

You can remove customer data and configuration information from the system for security purposes.

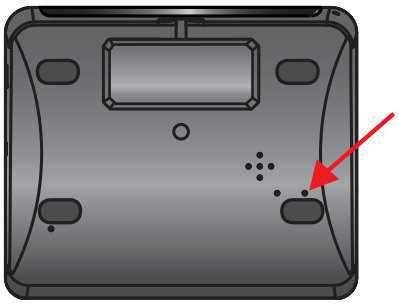
To perform a logical delete of the system files:

1. For RealPresence Group 300, 500, and 700 systems, power off the system by holding down the Power sensor for 3 to 5 seconds.
2. For RealPresence Group 550 system, turn off the power switch.
3. Unplug all network connections.
4. Perform a factory restore.
5. Wait for the system to start up and display the setup wizard.
6. Power off the system.

Performing a Factory Restore on the Polycom Touch Control

If the Polycom Touch Control is not functioning correctly or you have forgotten the Administration password, you can use the restore button to reset the device. This operation completely erases the device's settings and reinstalls the software.

The restore button is on the underside of the Polycom Touch Control, as shown in the following figure.



To reset the Polycom Touch Control using the restore button:

1. Power off the Polycom Touch Control.
2. Disconnect the LAN cable.
3. Disconnect all USB devices.
4. Press and hold the factory restore button while you reconnect the LAN cable to the device. Continue to hold the factory restore button down for about 10 seconds after the device powers on.

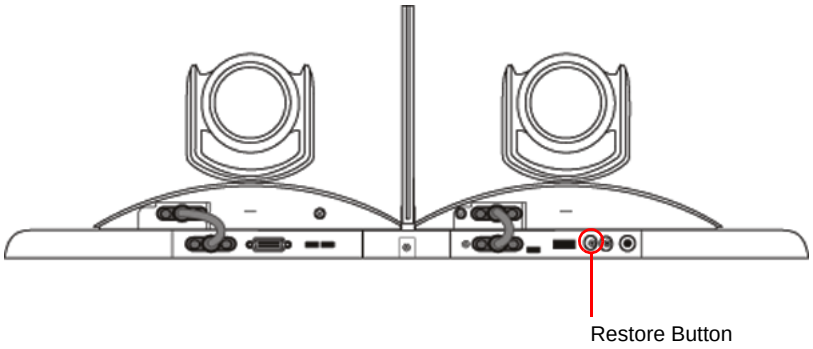
If the device requires login information, the default for the admin ID is `admin` and for the password, it's `456`.

During the factory restore process, the default platform and applications are reinstalled. Do not power off the device during the factory restore process. The device displays a success message when the process is complete.

Performing a Factory Restore on the Polycom EagleEye™ Director

If the Polycom EagleEye™ Director is not functioning correctly or you need to recover from a corrupted partition, you can use the restore button to reset the device. This operation completely erases the camera's settings and reinstalls the software.

The following figure shows you the location of the restore button on the back of the Polycom EagleEye Director.



To reset the Polycom EagleEye Director using the restore button:

Be sure to keep the Polycom EagleEye Director powered on during the factory restore.

1. Press and hold the restore button on the back of the EagleEye Director for 2-3 seconds while the power light cycles.

   When normal video content is displayed on the monitor instead of a blue screen, the EagleEye Director has been successfully restored.

2. Release the restore button.

How to Contact Technical Support

If you are not able to make test calls successfully and you have verified that the equipment is installed and set up correctly, contact your Polycom distributor or Polycom Technical Support.

To contact Polycom Technical Support, go to support.polycom.com.

Enter the following information, then ask a question or describe the problem. This information helps us to respond faster to your issue:

- The 14-digit serial number from the **System Detail** screen or the back of the system
- The software version from the **System Detail** screen
- Any active alerts generated by the system
- Information about your network
- Troubleshooting steps you have already tried

You can find the system detail information in the local interface by going to **Settings > System Information > Information** or in the web interface by clicking **System** in the blue bar at the top of the web interface page.

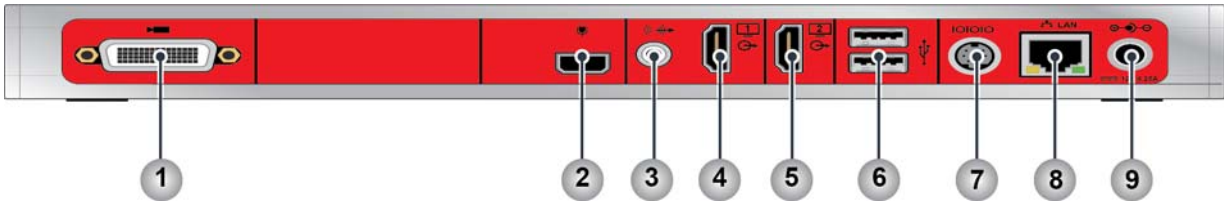
Polycom Solution Support

Polycom Implementation and Maintenance services provide support for Polycom solution components only. Additional services for supported third-party Unified Communications (UC) environments integrated with Polycom solutions are available from Polycom Global Services, and its certified Partners, to help customers successfully design, deploy, optimize, and manage Polycom visual communication within their third-party UC environments. UC Professional Services for Microsoft Integration is mandatory for Polycom Conferencing for Microsoft Outlook and Microsoft Lync Server integrations. For additional information and details please refer to http://www.polycom.com/services/professional_services/index.html or contact your local Polycom representative.

A

System Back Panel Views

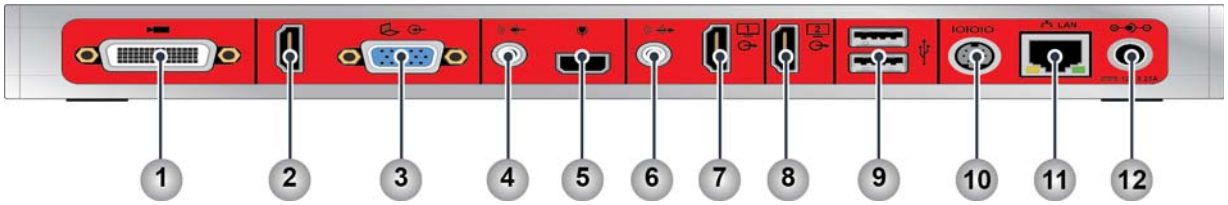
Polycom RealPresence Group 300 System



Ref. Number	Location in Web Interface: Admin Settings >	Input/ Output	Supported Formats	Description
1	Audio/Video > Video Inputs > Input 1	Video Input	HDCI	Input for the camera
2	N/A	Microphone Input	Polycom Microphone	Audio input for up to two Polycom microphone arrays or a SoundStation IP 7000 speaker phone or SoundStructure mixer
3	Audio/Video > Audio > Audio Output	Audio Output	3.5mm Stereo	Audio output for main monitor audio or external speaker system System tones and sound effects + Audio from the far site +
4	Audio/Video > Monitors > Monitor 1	Video Output 1	HDMI	Output for Monitor 1
5	Audio/Video > Monitors > Monitor 2	Video Output 2	HDMI	Output for Monitor 2 (available only with a monitor option key)
6	N/A	USB Connectors	USB 2.0	USB for Software Update, remote control battery charging

Ref. Number	Location in Web Interface: Admin Settings >	Input/ Output	Supported Formats	Description
7	General Settings > Serial Ports	Serial Port	RS-232	Serial port
8	Network > LAN Properties	LAN Port	Ethernet	Connectivity for IP and SIP calls, People+Content IP, and the system web interface
9	N/A	Power Input	12 V 6.25 A	Power input

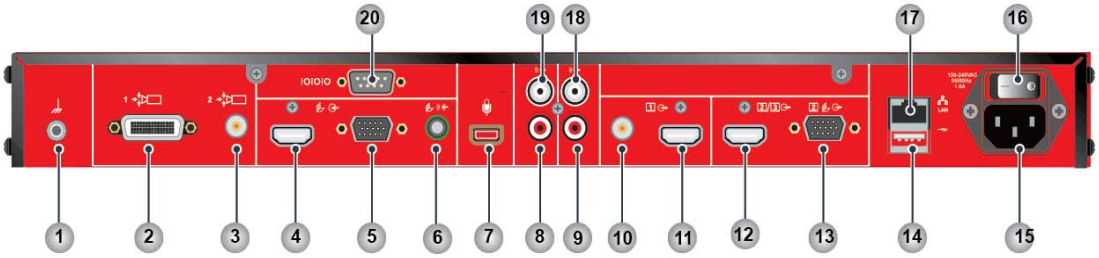
Polycom RealPresence Group 500 System



Ref. Number	Location in Web Interface: Admin Settings >	Input/ Output	Supported Formats	Description
1	Audio/Video > Video Inputs > Input 1	Video Input 1	HDCI	Input for Camera 1
2	Audio/Video > Video Inputs > Input 2 Audio/Video > Audio > Audio Input > Type: HDMI	Video Input 2/ Audio Input 1	HDMI	Auxiliary video and audio input
3	Audio/Video > Video Inputs > Input 2	Video Input 2	VGA	Video input for Content; associated with Audio Input 2
Note: Use either the HDMI or VGA video input, but not both.				
4	Audio/Video > Audio > Audio Input > Type: 3.5mm	Audio Input 2	3.5mm Stereo	Stereo line-level input Configurable to be associated with video input 2 or as an auxiliary audio input
5	N/A	Microphone Input	Polycom Microphone	Audio input for up to two Polycom microphone arrays or a SoundStation IP 7000 speaker phone or SoundStructure mixer
6	Audio/Video > Audio > Audio Output	Audio Output 1	3.5mm Stereo	Audio output for main monitor audio or external speaker system Audio Mix Routed to the Output: System tones and sound effects + Audio from the far site + Audio connected to audio input 2 when associated with video input 2

Ref. Number	Location in Web Interface: Admin Settings >	Input/ Output	Supported Formats	Description
7	Audio/Video > Monitors > Monitor 1	Video Output 1	HDMI with embedded audio DVI-D	Output for Monitor 1 When format is HDMI, audio output for main monitor audio Audio Mix Routed to the Output: System tones and sound effects + Audio from the far site + Audio connected to audio input 2 when associated with video input 2
8	Audio/Video > Monitors > Monitor 2	Video Output 2	HDMI DVI-D	Output for Monitor 2; does not include embedded audio
9	N/A	USB Connectors	USB 2.0	USB for Software Update, remote control battery charging
10	General Settings > Serial Ports	Serial Port	RS-232	Serial port
11	Network > LAN Properties	LAN Port	Ethernet	Connectivity for IP calls, People+Content IP, and the system web interface
12	N/A	Power Input	12 V 6.25 A	Power input

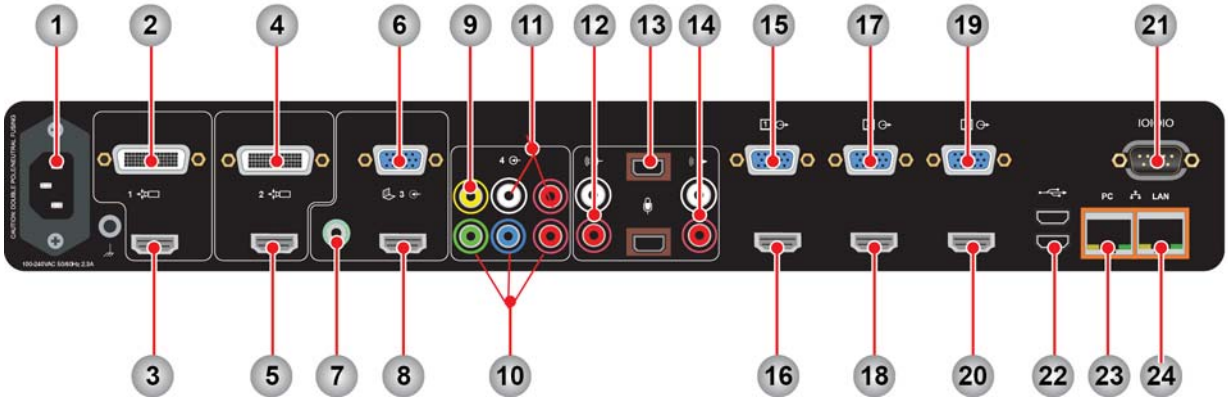
Polycom RealPresence Group 550 System



Reference Number	Input/Output	Supported Formats	Description
1	System Grounding		
2	Video Input 1	HDCI	Input for Camera 1
3	Video Input 2	SDI	Input for Camera 2

Reference Number	Input/Output	Supported Formats	Description
4	Content input	HDMI	Video and audio input for PC Content
5	Content input	VGA	Video input for PC Content
6	Audio input	3.5mm Stereo	Audio input for PC Content
7	Audio input	Polycom Microphone	Audio input for Polycom microphones or a SoundStation IP 7000 or Soundstructure mixer
8	Line audio input, right channel	RCA	Auxiliary audio input Intended as microphone input
9	Audio output, right channel	RCA	For louder speaker
10	Video output 1	SDI	Output for monitor 1
11	Video output 1	HDMI	Output for monitor 1
12	Video output 2/3	HDMI	Output for monitor 2/3
13	Video output 2	VGA	Output for monitor 2
Note: Use one interface for video inputs 1 and 2, but not both. Otherwise, you get the same video output on both screens.			
14	USB connectors	USB 2.0	USB for Software Update, remote control battery charge
15	Power Input	100-240 VAC 1.5A	Power input
16	Power switch		
17	LAN port	Ethernet	Connectivity for IP calls, People+Content IP, and the system's web interface
18	Audio output, left channel	RCA	Audio output for main monitor audio or external speaker system Audio Mix Routed to the Output: • System tones and sound effects + • Audio from the far site + • Content audio connected to PC audio input
19	Audio input, left channel	RCA	Auxiliary audio input Intended as microphone input
20	RS-232 serial interface		For SDI camera control

Polycom RealPresence Group 700 System



Ref. Number	Location in Web Interface: Admin Settings >	Input/ Output	Supported Formats	Description
1	N/A	Power Input	100-240 VAC 2.3 A	Power input
2	Audio/Video > Video Inputs > Input 1	Video Input 1	HDCI	Input for Camera 1
3	Audio/Video > Video Inputs > Input 1	Video Input 1	HDMI	Input for Camera 1
4	Audio/Video > Video Inputs > Input 2	Video Input 2	HDCI	Input for Camera 2
5	Audio/Video > Video Inputs > Input 2	Video Input 2	HDMI	Input for Camera 2
Note: Use either the HDCI or HDMI for video inputs 1 and 2, but not both.				
6	Audio/Video > Video Inputs > Input 3	Video Input 3	VGA	Video input associated with audio input 3
7	Audio/Video > Audio > Audio Input > Type: 3.5mm	Audio Input 3	3.5mm Stereo	Audio input for stereo line-level Associated with video input 3 (audio is disabled until camera 3 is selected) Audio is included in local audio mix when video source is selected

Ref. Number	Location in Web Interface: Admin Settings >	Input/ Output	Supported Formats	Description
8	Audio/Video > Video Inputs > Input 3	Video Input 3	HDMI	Video and audio input
Note: Use either the HDMI or VGA for video input 3, but not both.				
9	Audio/Video > Video Inputs > Input 4	VIdeo Input 4	Composite Video	Video input Associated with audio input 4 (audio is disabled until video input 4 is selected)
10	Audio/Video > Video Inputs > Input 4	Video Input 4	Component Video	Video input associated with audio input 4 (audio is disabled until video input 4 is selected)
11	Audio/Video > Audio > Audio Input > Type: Component	Audio Input 4	RCA	Associated with video input 4 Inactive until video input is selected Audio is included in local audio mix when video source is selected
Note: Use either the Composite/RCA or Component for input 4, but not both.				
12	Audio/Video > Audio > Audio Input > Type: Line	Audio Input 2	RCA	Auxiliary audio input Intended as microphone input; sent to far end only
13	N/A	Audio Input 1	Polycom Microphone	Audio input for up to three Polycom microphone arrays or a SoundStation IP 7000 speaker phone or SoundStructure mixer
14	N/A	Audio Output 2	RCA	Audio output for main monitor audio Audio Mix Routed to the Output: System tones and sound effects + Audio from the far site + Audio input from audio inputs 3 and 4 when associated video is selected
15	Audio/Video > Monitors > Monitor 1	Video Output 1	VGA	Output for Monitor 1
16	Audio/Video > Monitors > Monitor 1	Video Output 1 Audio Output 1	HDMI	Output for Monitor 1 Audio Mix Routed to the Output: System tones and sound effects + Audio from the far site + Audio input from audio inputs 3 and 4 when associated video is selected

Ref. Number	Location in Web Interface: Admin Settings >	Input/ Output	Supported Formats	Description
17	Audio/Video > Monitors > Monitor 2	Video Output 2	VGA	Output for Monitor 2
18	Audio/Video > Monitors > Monitor 2	Video Output 2	HDMI	Output for Monitor 2
19	Audio/Video > Monitors > Monitor 3	Video Output 3	VGA	Output for Monitor 3
20	Audio/Video > Monitors > Monitor 3	Video Output 3	HDMI	Output for Monitor 3
Note: Use either the HDMI or VGA for video outputs 1, 2, and 3, but not both.				
21	General Settings > Serial Ports	Serial Port	RS-232	Serial port
22	N/A	USB Connectors	USB 3.0	USB for Software Update, remote control battery charging
23	Network > LAN Properties > LAN Options	PC LAN Port	Ethernet	Ethernet switch port
24	Network > LAN Properties	LAN Port	Ethernet	Connectivity for IP calls, People+Content IP, and the system web interface

B

Port Usage

You might need this information when you configure your network equipment for video conferencing.

The following tables shows IP port usage.

Connections to Group Series

Inbound Port	Type	Proto-col	Function	Configuration		
				On By Default? (Low Security Profile)	Enable/Disable?	Configurable Port Number
22	Static	TCP	Polycom Touch Control over SSH	Yes	Admin Settings > General Settings > Pairing > Polycom Touch Control > Enable Polycom Touch Control	No
23	Static	TCP	Telnet Diagnostics	No	Admin Settings > Security > Global Security > Access > Enable Telnet Access	No
24	Static	TCP	Polycom API	No	Admin Settings > Security > Global Security > Access > Enable Telnet Access	No
80	Static	TCP	Web UI over HTTP	Yes	Admin Settings > Security > Global Security > Access > Enable Web Access - disables HTTP and HTTPS port Admin Settings > Security > Global Security > Access > Restrict to HTTPS - disables HTTP port	Admin Settings > Security > Global Security > Access > Web Access Port (http)
161	Static	UDP	SNMP	No	Admin Settings > Security > Global Security > Access > Enable SNMP Access Admin Settings > Servers > SNMP > Enable SNMP	Admin Settings > Servers > SNMP > Listening Port

Inbound Port	Type	Proto-col	Function	Configuration		
				On By Default? (Low Security Profile)	Enable/Disable?	Configurable Port Number
443	Static	TLS	Web UI over HTTPS	Yes	Admin Settings > Security > Global Security > Access > Enable Web Access	No
1719	Static	UDP	H.225.0 RAS	No	Admin Settings > Network > IP Network > H.323 > Use Gatekeeper	No
1720	Static	TCP	H.225.0 Call Signaling	Yes	Admin Settings > Network > IP Network > H.323 > Enable IP H.323	No
5001	Static	TCP	People+Content™ IP	Yes	Admin Settings > Audio / Video > Video Input > General Camera Settings > Enable People+Content IP	No
5060	Static	TCP UDP	SIP (Protocol depends on Transport Protocol setting)	Yes	Admin Settings > Network > IP Network > SIP > Enable SIP Admin Settings > Network > IP Network > SIP > Transport Protocol	No
5061	Static	TLS	SIP	Yes	Admin Settings > Network > IP Network > SIP > Enable SIP Admin Settings > Network > IP Network > SIP > Transport Protocol	No
49152-65535	Dynamic	TCP	H.245	Yes	Admin Settings > Network > IP Network > H.323 > Enable IP H.323	Admin Settings > Network > IP Network > Firewall > Fixed Ports > TCP Ports (1024-65535)
16384-32764 (Default)	Dynamic	UDP	RTP/RTCP Video and Audio	Yes	Admin Settings > Network > IP Network > H.323 > Enable IP H.323 Admin Settings > Network > IP Network > SIP > Enable SIP	Admin Settings > Network > IP Network > Firewall > Fixed Ports > UDP Ports (1024-65535)

Connections from Group Series

Outbound Port	Type	Pro-tocol	Function	Configuration		
				On By Default? (Low Security Profile)	Enable/Disable?	Configurable Port Number
80	Static	TCP	Polycom Product Registration	Yes	Uncheck "Register" checkbox during OOB setup	No
123	Static	UDP	NTP	Yes	Admin Settings > General Settings > Date and Time > System Time > Time Server	No
162	Static	UDP	SNMP TRAP	No	Admin Settings > Servers > SNMP > Enable SNMP Admin Settings > Servers > SNMP > Destination Address <1,2,3>	Yes - Admin Settings > Servers > SNMP > Destination Address <1,2,3> > Port
389	Static	TLS	LDAP	No	Admin Settings > Servers > Directory Servers > Server Type	Yes - Admin Settings > Servers > Directory Servers > Server Type = LDAP - Admin Settings > Servers > Directory Servers > Server Port
389	Static	TLS	LDAP to ADS (External Authentication)	No	Admin Settings > Security > Global Security > Authentication > Enable Active Directory External Authentication	No
443	Static	TLS	CMA/RealPresence Resource Management (Provisioning, Monitoring, Softupdate)	No	Admin Settings > Servers > Provisioning Service > Enable Provisioning	No
443	Static	TLS	Microsoft Exchange Server (Calendaring)	No	Admin Settings > Servers > Calendaring Service > Enable Calendaring Service	No
443	Static	TLS	Microsoft Lync Address Book	No	Admin Settings > Servers > Directory Servers > Server Type	No
514	Static	UDP	SYSLOG	No	Diagnostics > System > System Log Settings > Enable Remote Logging	No
1718	Static	UDP	H.225.0 Gatekeeper Discovery	No	Admin Settings > Network > IP Network > H.323 > Use Gatekeeper = Auto	No

Outbound Port	Type	Pro-tocol	Function	Configuration		
				On By Default? (Low Security Profile)	Enable/Disable?	Configurable Port Number
1719	Static	UDP	H.225.0 RAS	No	Admin Settings > Network > IP Network > H.323 > Use Gatekeeper	Yes - outgoing port can be specified in the **Primary Gatekeeper IP Address** field
1720	Static	TCP	H.225.0 Call Signaling	Yes	Admin Settings > Network > IP Network > H.323 > Enable IP H.323	No
3601	Static	TCP	GDS	No	Admin Settings > Servers > Directory Servers > Server Type	No
5060	Static	UDP TCP	SIP	Yes	Admin Settings > Network > IP Network > SIP > Enable SIP AND Admin Setting > Network > IP Network > SIP > Transport Protocol = Auto, TCP, or UDP	Yes - outgoing port can be specified in the dial string (user@domain:port) Note that the transport protocol used depends on Admin Settings > Network > IP Network > SIP > Transport Protocol
5061	Static	TLS	SIP	Yes	Admin Settings > Network > IP Network > SIP > Enable SIP AND Admin Setting > Network > IP Network > SIP > Transport Protocol = Auto or TLS	Yes - outgoing port can be specified in the dial string (user@domain:port)
5222	Static	TCP	CMA/RealPresence Resource Manager: XMPP	No	Provisioned by RealPresence Resource Manager	No
49152-65535	Dynamic	TCP	H.245	Yes	Admin Settings > Network > IP Network > Enable IP H.323	Admin Settings > Network > IP Network > Firewall > Fixed Ports > TCP Ports (1024-65535)
16384-32764 (Default)	Dynamic	UDP	RTP/RTCP Video and Audio	Yes	Admin Settings > Network > IP Network > Enable IP H.323 Admin Settings > Network > IP Network > Enable SIP	Admin Settings > Network > IP Network > Firewall > Fixed Ports > UDP Ports (1024-65535)

C

Security Profile Tables

Using the Maximum Security Profile

The following table shows the default values for specific settings when you use the **Maximum** security profile.

Admin Settings Area	Maximum		
	Range	Default Value	Configurable?
General Settings			
System Settings			
Auto Answer Point to Point Video	Checkbox	Disabled	Yes
Auto Answer Multipoint Video	Checkbox	Disabled	Yes
Call Detail Report	Checkbox	Enabled	Yes
Enable Recent Calls	Checkbox	Disabled	Yes
Pairing			
Allow Polycom Touch Control Pairing **Note:** Disabling this setting closes the SSH port.	Checkbox	Disabled	Yes
SmartPairing Mode	Disabled Automatic	Disabled	Read-only
Serial Ports			
Mode			
RS-232 Mode **Note:** Some Polycom® RealPresence® Group systems support only a subset of listed modes.	Off Control	Off	Yes
Network			
IP Network			
Enable SIP	Checkbox	Enabled	Yes
Transport Protocol	Auto TLS TCP UDP	TLS	Yes

Admin Settings Area	Maximum		
	Range	Default Value	Configurable?
Dialing Preference			
Scalable Video Coding Preference (H.264)	SVC then AVC AVC Only	AVC Only	Yes
Audio/Video			
Video Inputs			
General Camera Settings			
Allow Other Participants In a Call to Control Your Camera	Checkbox	Disabled	Yes
Enable People+Content IP	Checkbox	Disabled	Yes
Enable Camera Preset Snapshot Icons	Checkbox	Disabled	Yes
Security			
Global Security			
Security Profile			
Security Profile	Maximum High Medium Low	Maximum	Yes
Authentication			
Active Directory Authentication	Checkbox	Disabled	Yes
Access			
Enable Network Intrusion Detection System (NIDS)	Checkbox	Enabled	Yes
Enable Web Access	Checkbox	Enabled	Yes
Restrict to HTTPS **Note:** If Restrict to HTTPS is enabled, the SNMP Listening Port must be set to 443.	Checkbox	Enabled	Read-only
Web access port (http) **Note:** You cannot select this setting if the **Restrict to HTTPS** setting is enabled.	16-bit integer	Grayed out (80)	Read-only
Enable Remote Access: Telnet	Checkbox	Disabled	Read-only
Enable Remote Access: SNMP	Checkbox	Disabled	Yes
Lock Port after Failed Logins	Off,2-10	Off	Yes
Port Lock Duration	1,2,3,5,10,20,30 minutes, 1,2,4,8 hours	1 minute	Yes
Reset Port Lock Counter After	Off,[1..24] hours	Off	Yes
Enable Whitelist	Checkbox	Disabled	Yes
Idle Session Timeout	1,3,5,10,15,20,30,45 minutes, 1,2,4,8 hours	10	Yes

Admin Settings Area	Maximum		
	Range	Default Value	Configurable?
Maximum Number of Active Sessions	10-50	25	Yes
Allow Video Display on Web	Checkbox	Disabled	Yes
Encryption			
Require AES Encryption for Calls	Off When Available Required-Video Calls Required-All Calls	Required-Video Calls	Yes
Require FIPS 140 Cryptography	Checkbox	Enabled	Yes
Local Accounts			
Account Lockout			
Lock Admin Account After Failed Logins	2-10	3	Yes
Admin Account Lock Duration	1,2,3,5 minutes	1	Yes
Reset Admin Account Lock Counter After	Off,[1..24] hours	1	Yes
Lock User Account After Failed Logins	2-10	3	Yes
User Account Lock Duration	1,2,3,5,10,20,30 minutes, 1,2,4,8 hours	1 minute	Yes
Reset User Account Lock Counter After	Off,[1..24] hours	1	Yes
Login Credentials			
Use Room Password for Remote Access	Checkbox	Disabled	Read-only
Require User Login for System Access	Checkbox	Enabled	Yes
Password Requirements			
Admin (Room, Remote), User (Room, Remote)			
Reject Previous Passwords	8-16	10	Yes
Minimum Password Age in Days	Off,1,5,10,15,20,30	Off	Yes
Maximum Password Age in Days	30,60,90,100,110,120, 130,140,150,160,170, 180	60	Yes
Minimum Changed Characters	1-4	4	Yes
Password Expiration Warning	1-7	7	Yes
Remote Access (Admin Remote, User Remote)			
Minimum Length	6-16,32	15	Yes
Require Lowercase	Off,1,2,All	2	Yes
Require Uppercase	Off,1,2,All	2	Yes
Require Numbers	Off,1,2,All	2	Yes
Require Special Characters	Off,1,2,All	2	Yes
Maximum Consecutive Repeated Characters	1-4	2	Yes

Admin Settings Area	Maximum		
	Range	Default Value	Configurable?
Can contain ID or Its Reverse Form	Checkbox	Disabled	Read-only
User (Room), Admin (Room)			
Minimum Length	6-16,32	9	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes
Require Special Characters	Off,1,2,All	Off	Yes
Maximum Consecutive Repeated Characters	1-4	2	Yes
Can contain ID or Its Reverse Form	Checkbox	Disabled	Read-only
Meeting			
Minimum Length	Off,1-20,32	Off	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes
Require Special Characters	Off,1,2,All	Off	Yes
Reject Previous Passwords	8-16	10	Yes
Minimum Password Age in Days	Off,1,5,10,15,20,30	Off	Yes
Maximum Consecutive Repeated Characters	1-4	2	Yes
SNMP **Note:** SNMP passwords are applicable only when the system uses SNMP v3.			
Minimum Length	6-16,32	12	Yes
Require Lowercase	Off,1,2,All	1	Yes
Require Uppercase	Off,1,2,All	1	Yes
Require Numbers	Off,1,2,All	1	Yes
Require Special Characters	Off,1,2,All	1	Yes
Reject Previous Passwords	8-16	10	Yes
Minimum Password Age in Days	Off,1,5,10,15,20,30	Off	Yes
Maximum Consecutive Repeated Characters	1-4	2	Yes
Can contain ID or Its Reverse Form	Checkbox	Disabled	Read-only
Security Banner			
Enable Security Banner	Checkbox	Enabled	Yes
Banner Text	DoD Custom	DoD	Yes
Local System Banner Text	Unicode characters, 2048 bytes max	DoD Banner Text	Yes

Admin Settings Area	Maximum		
	Range	Default Value	Configurable?
Remote System Banner Text	Unicode characters, 2048 bytes max	DoD Banner Text	Yes
Certificates			
Certificate Options			
Certificate Validation (Web Server)	Checkbox	Enabled	Yes
Certificate Validation (Client Apps)	Checkbox	Enabled	Yes
Revocation			
Revocation Method	OCSP CRL	OCSP	Yes
Allow Incomplete Revocation Checks	Checkbox	Enabled	Yes
Servers			
Directory Servers			
XMPP	Provisioned-only	Disabled	Yes (via provisioning)
Service Type **Note:** the *Microsoft* selection means Microsoft Lync Server 2010 or 2013, depending on what is installed.	Off Microsoft Polycom GDS LDAP	Off	Yes
SNMP			
Version1	Checkbox	Disabled	Yes
Version2c	Checkbox	Disabled	Yes
Version3	Checkbox	Enabled	Yes
Calendaring Service			
Enable Calendaring Service	Checkbox	Disabled	Yes

Other Restrictions when Using the Maximum Security Profile

- Microphones are muted when system goes to sleep. The microphones cannot be unmuted until the system wakes up and either reaches the Home screen or answers a call.
- If **Require Login for System Access** is enabled, you must first log in before you can unmute the microphones.
- The following settings are not available in the “User Settings” menu (they are configurable only in their respective sections of the Admin Settings):
  - **Camera > Far Control of Near Camera**
  - **Meetings > Mute Auto Answer Calls**
  - **Meetings > Auto Answer Point-to-Point Video**
  - **Meetings > Auto Answer Multipoint Video**
  - **Meetings > Allow Video Display on Web**

Using the High Security Profile

The following table shows the default values for specific Admin settings when you use the **High** security profile.

Admin Settings Area	High		
	Range	Default Value	Configurable?
General Settings			
System Settings			
Auto Answer Point to Point Video	Checkbox	Disabled	Yes
Auto Answer Multipoint Video	Checkbox	Disabled	Yes
Call Detail Report	Checkbox	Enabled	Yes
Enable Recent Calls	Checkbox	Disabled	Yes
Pairing			
Allow Polycom Touch Control Pairing **Note:** Disabling this setting closes the SSH port.	Checkbox	Disabled	Yes
SmartPairing Mode	Disabled Automatic Manual	Disabled	Yes
Serial Ports			
Mode			
RS-232 Mode **Note:** Some Polycom® RealPresence® Group systems support only a subset of listed modes.	Off Control	Off	Yes
Network			
IP Network			
Enable SIP	Checkbox	Enabled	Yes
Transport Protocol	Auto TLS TCP UDP	TLS	Yes
Dialing Preference			
Scalable Video Coding Preference (H.264)	SVC then AVC AVC Only	AVC Only	Yes
Audio/Video			
Video Inputs			
General Camera Settings			
Allow Other Participants In a Call to Control Your Camera	Checkbox	Disabled	Yes
Enable People+Content IP	Checkbox	Disabled	Yes
Enable Camera Preset Snapshot Icons	Checkbox	Disabled	Yes

Admin Settings Area	High		
	Range	Default Value	Configurable?
Security			
Global Security			
Security Profile			
Security Profile	Maximum High Medium Low	High	Yes
Authentication			
Active Directory Authentication	Checkbox	Disabled	Yes
Access			
Enable Network Intrusion Detection System (NIDS)	Checkbox	Enabled	Yes
Enable Web Access	Checkbox	Enabled	Yes
Restrict to HTTPS **Note:** If Restrict to HTTPS is enabled, the SNMP Listening Port must be set to 443.	Checkbox	Enabled	Read-only
Web access port (http) **Note:** You cannot select this setting if the **Restrict to HTTPS** setting is enabled.	16-bit integer	Grayed out (80)	Read-only
Enable Remote Access: Telnet	Checkbox	Disabled	Read-only
Enable Remote Access: SNMP	Checkbox	Disabled	Yes
Lock Port after Failed Logins	Off,2-10	Off	Yes
Port Lock Duration	1,2,3,5,10,20,30 minutes	1 minute	Yes
Reset Port Lock Counter After	Off,[1..24] hours	Off	Yes
Enable Whitelist	Checkbox	Disabled	Yes
Idle Session Timeout	1,3,5,10,15,20,30,45 minutes, 1,2,4,8 hours	10	Yes
Maximum Number of Active Sessions	10-50	25	Yes
Allow Video Display on Web	Checkbox	Disabled	Yes
Encryption			
Require AES Encryption for Calls	Off When Available Required-Video Calls Required-All Calls	Required-Video Calls	Yes
Require FIPS 140 Cryptography	Checkbox	Enabled	Yes
Local Accounts			
Account Lockout			
Lock Admin Account After Failed Logins	2-10	3	Yes

Admin Settings Area	High		
	Range	Default Value	Configurable?
Admin Account Lock Duration	1,2,3,5 minutes	1	Yes
Reset Admin Account Lock Counter After	Off,[1..24] hours	Off	Yes
Lock User Account After Failed Logins	2-10	3	Yes
User Account Lock Duration	1,3,5,10,15,20,30 minutes, 1,2,4,8 hours	1 minute	Yes
Reset User Account Lock Counter After	Off,[1..24] hours	Off	Yes
Login Credentials			
Use Room Password for Remote Access	Checkbox	Disabled	Yes
Require User Login for System Access	Checkbox	Enabled	Yes
Password Requirements			
Admin (Room, Remote), User (Room, Remote)			
Reject Previous Passwords	Off,1-16	10	Yes
Minimum Password Age in Days	Off,1,5,10,15,20,30	Off	Yes
Maximum Password Age in Days	Off,30,60,90,100,110, 120,130,140,150,160, 170,180	90	Yes
Minimum Changed Characters	1-4	4	Yes
Password Expiration Warning	1-7	4	Yes
Remote Access (Admin Remote, User Remote)			
Minimum Length	1-16,32	6	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes
Require Special Characters	Off,1,2,All	Off	Yes
Maximum Consecutive Repeated Characters	Off,1-4	Off	Yes
Can contain ID or Its Reverse Form	Checkbox	Disabled	Read-only
User (Room), Admin (Room)			
Minimum Length	6-16,32	6	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes
Require Special Characters	Off,1,2,All	Off	Yes
Maximum Consecutive Repeated Characters	Off,1-4	Off	Yes
Can contain ID or Its Reverse Form	Checkbox	Disabled	Read-only

Admin Settings Area	High		
	Range	Default Value	Configurable?
Meeting			
Minimum Length	Off,1-20,32	Off	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes
Require Special Characters	Off,1,2,All	Off	Yes
Reject Previous Passwords	Off,1-16	10	Yes
Minimum Password Age in Days	Off,1,5,10,15,20,30	Off	Yes
Maximum Consecutive Repeated Characters	Off,1-4	Off	Yes
SNMP **Note:** SNMP passwords are applicable only when the system uses SNMP v3.			
Minimum Length	6-16,32	8	Yes
Require Lowercase	Off,1,2,All	1	Yes
Require Uppercase	Off,1,2,All	1	Yes
Require Numbers	Off,1,2,All	1	Yes
Require Special Characters	Off,1,2,All	1	Yes
Reject Previous Passwords	Off,1-16	5	Yes
Minimum Password Age in Days	Off,1,5,10,15,20,30	Off	Yes
Maximum Consecutive Repeated Characters	Off,1-4	Off	Yes
Can contain ID or Its Reverse Form	Checkbox	Disabled	Read-only
Security Banner			
Enable Security Banner	Checkbox	Disabled	Yes
Banner Text	DoD Custom	Custom	Yes
Local System Banner Text	Unicode characters, 2048 bytes max	Null (no text)	Yes
Remote System Banner Text	Unicode characters, 2048 bytes max	Null (no text)	Yes
Certificates			
Certificate Options			
Certificate Validation (Web Server)	Checkbox	Enabled	Yes
Certificate Validation (Client Apps)	Checkbox	Enabled	Yes
Revocation			
Revocation Method	OCSP CRL	OCSP	Yes
Allow Incomplete Revocation Checks	Checkbox	Enabled	Yes

Admin Settings Area	High		
	Range	Default Value	Configurable?
Servers			
Directory Servers			
XMPP	Provisioned-only	Disabled	Yes (via provisioning)
Service Type **Note:** the *Microsoft* selection means Microsoft Lync Server 2010 or 2013, depending on what is installed.	Off Microsoft Polycom GDS LDAP	Off	Yes
SNMP			
Version1	Checkbox	Disabled	Yes
Version2c	Checkbox	Disabled	Yes
Version3	Checkbox	Enabled	Yes
Calendaring Service			
Enable Calendaring Service	Checkbox	Disabled	Yes

Using the Medium Security Profile

The following table shows the default values for specific Admin settings when you use the **Medium** security profile.

Admin Settings Area	Medium		
	Range	Default Value	Configurable?
General Settings			
System Settings			
Auto Answer Point to Point Video	Checkbox	Disabled	Yes
Auto Answer Multipoint Video	Checkbox	Disabled	Yes
Call Detail Report	Checkbox	Enabled	Yes
Enable Recent Calls	Checkbox	Enabled	Yes
Pairing			
Allow Polycom Touch Control Pairing **Note:** Disabling this setting closes the SSH port.	Checkbox	Enabled	Yes
SmartPairing Mode	Disabled Automatic Manual	Enabled	Yes

Admin Settings Area	Medium		
	Range	Default Value	Configurable?
Serial Ports			
Mode			
RS-232 Mode **Note:** Some Polycom® RealPresence® Group systems support only a subset of listed modes.	Off Control Camera PTZ Closed Caption Pass Thru	Off	Yes
Network			
IP Network			
Enable SIP	Checkbox	Enabled	Yes
Transport Protocol	Auto TLS TCP UDP	TLS	Yes
Dialing Preference			
Scalable Video Coding Preference (H.264)	SVC then AVC AVC Only	AVC Only	Yes
Audio/Video			
Video Inputs			
General Camera Settings			
Allow Other Participants In a Call to Control Your Camera	Checkbox	Disabled	Yes
Enable People+Content IP	Checkbox	Enabled	Yes
Enable Camera Preset Snapshot Icons	Checkbox	Enabled	Yes
Security			
Global Security			
Security Profile			
Security Profile	Maximum High Medium Low	Medium	Yes
Authentication			
Active Directory Authentication	Checkbox	Disabled	Yes
Access			
Enable Network Intrusion Detection System (NIDS)	Checkbox	Enabled	Yes
Enable Web Access	Checkbox	Enabled	Yes
Restrict to HTTPS **Note:** If Restrict to HTTPS is enabled, the SNMP Listening Port must be set to 443.	Checkbox	Enabled	Yes

Admin Settings Area	Medium		
	Range	Default Value	Configurable?
Web access port (http) **Note:** You cannot select this setting if the **Restrict to HTTPS** setting is enabled.	16-bit integer	Grayed out (80)	Yes
Enable Remote Access: Telnet	Checkbox	Disabled	Yes
Enable Remote Access: SNMP	Checkbox	Disabled	Yes
Lock Port after Failed Logins	Off,2-10	Off	Yes
Port Lock Duration	1,2,3,5,10,20,30 minutes, 1,2,4,8 hours	1 minute	Yes
Reset Port Lock Counter After	Off,[1..24] hours	Off	Yes
Enable Whitelist	Checkbox	Disabled	Yes
Idle Session Timeout	1,2,3,5,10,20,30,45 minutes, 1,2,4,8 hours	10	Yes
Maximum Number of Active Sessions	10-50	25	Yes
Allow Video Display on Web	Checkbox	Disabled	Yes
Encryption			
Require AES Encryption for Calls	Off When Available Required-Video Calls Required-All Calls	When Available	Yes
Require FIPS 140 Cryptography	Checkbox	Enabled	Yes
Local Accounts			
Account Lockout			
Lock Admin Account After Failed Logins	Off,2-10	3	Yes
Admin Account Lock Duration	1,2,3,5 minutes	1	Yes
Reset Admin Account Lock Counter After	Off,[1..24] hours	Off	Yes
Lock User Account After Failed Logins	Off,2-10	3	Yes
User Account Lock Duration	1,2,3,5,10,20,30 minutes, 1,2,4,8 hours	1 minute	Yes
Reset User Account Lock Counter After	Off,[1..24] hours	Off	Yes
Login Credentials			
Use Room Password for Remote Access	Checkbox	Enabled	Yes
Require User Login for System Access	Checkbox	Enabled	Yes
Password Requirements			
Admin (Room, Remote), User (Room, Remote)			
Reject Previous Passwords	Off,1-16	Off	Yes
Minimum Password Age in Days	Off,1,5,10,15,20,30	Off	Yes

Admin Settings Area	Medium		
	Range	Default Value	Configurable?
Maximum Password Age in Days	Off,30,60,90,100,110, 120,130,140,150,160, 170,180	Off	Yes
Minimum Changed Characters	Off,1-4,All	Off	Yes
Password Expiration Warning	Off,1-7	Off	Yes
Remote Access (Admin Remote, User Remote)			
Minimum Length	1-16,32	3	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes
Require Special Characters	Off,1,2,All	Off	Yes
Maximum Consecutive Repeated Characters	Off,1-4	Off	Yes
Can contain ID or Its Reverse Form	Checkbox	Disabled	Yes
User (Room), Admin (Room)			
Minimum Length	3-16,32	3	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes
Require Special Characters	Off,1,2,All	Off	Yes
Maximum Consecutive Repeated Characters	Off,1-4	Off	Yes
Can contain ID or Its Reverse Form	Checkbox	Disabled	Yes
Meeting			
Minimum Length	Off,1-20,32	Off	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes
Require Special Characters	Off,1,2,All	Off	Yes
Reject Previous Passwords	Off,1-16	Off	Yes
Minimum Password Age in Days	Off,1,5,10,15,20,30	Off	Yes
Maximum Consecutive Repeated Characters	Off,1-4	Off	Yes
SNMP **Note:** SNMP passwords are applicable only when the system uses SNMP v3.			
Minimum Length	3-16,32	3	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes

Admin Settings Area	Medium		
	Range	Default Value	Configurable?
Require Special Characters	Off,1,2,All	Off	Yes
Reject Previous Passwords	Off,1-16	Off	Yes
Minimum Password Age in Days	Off,1,5,10,15,20,30	Off	Yes
Maximum Consecutive Repeated Characters	Off,1-4	Off	Yes
Can contain ID or Its Reverse Form	Checkbox	Disabled	Yes
Security Banner			
Enable Security Banner	Checkbox	Disabled	Yes
Banner Text	DoD Custom	Custom	Yes
Local System Banner Text	Unicode characters, 2048 bytes max	Null (no text)	Yes
Remote System Banner Text	Unicode characters, 2048 bytes max	Null (no text)	Yes
Certificates			
Certificate Options			
Certificate Validation (Web Server)	Checkbox	Disabled	Yes
Certificate Validation (Client Apps)	Checkbox	Disabled	Yes
Revocation			
Revocation Method	OCSP CRL	OCSP	Yes
Allow Incomplete Revocation Checks	Checkbox	Enabled	Yes
Servers			
Directory Servers			
XMPP	Provisioned-only	Disabled	Yes (via provisioning)
Service Type **Note:** the *Microsoft* selection means Microsoft Lync Server 2010 or 2013, depending on what is installed.	Off Microsoft Polycom GDS LDAP	Off	Yes
SNMP			
Version1	Checkbox	Disabled	Yes
Version2c	Checkbox	Disabled	Yes
Version3	Checkbox	Enabled	Yes
Calendaring Service			
Enable Calendaring Service	Checkbox	Disabled	Yes

Using the Low Security Profile

The following table shows the default values for specific Admin settings when you use the **Low** security profile.

Admin Settings Area	Low		
	Range	Default Value	Configurable?
General Settings			
System Settings			
Auto Answer Point to Point Video	Checkbox	Disabled	Yes
Auto Answer Multipoint Video	Checkbox	Disabled	Yes
Call Detail Report	Checkbox	Enabled	Yes
Enable Recent Calls	Checkbox	Enabled	Yes
Pairing			
Allow Polycom Touch Control Pairing **Note:** Disabling this setting closes the SSH port.	Checkbox	Enabled	Yes
SmartPairing Mode	Disabled Automatic Manual	Disabled	Yes
Serial Ports			
Mode			
RS-232 Mode **Note:** Some Polycom® RealPresence® Group systems support only a subset of listed modes.	Off Control Camera PTZ Closed Caption Pass Thru	Off	Yes
Network			
IP Network			
Enable SIP	Checkbox	Enabled	Yes
Transport Protocol	Auto TLS TCP UDP	Auto	Yes
Dialing Preference			
Scalable Video Coding Preference (H.264)	SVC then AVC AVC Only	AVC Only	Yes
Audio/Video			
Video Inputs			
General Camera Settings			
Allow Other Participants In a Call to Control Your Camera	Checkbox	Enabled	Yes
Enable People+Content IP	Checkbox	Enabled	Yes

Admin Settings Area	Low		
	Range	Default Value	Configurable?
Enable Camera Preset Snapshot Icons	Checkbox	Enabled	Yes
Security			
Global Security			
Security Profile			
Security Profile	Maximum High Medium Low	Low	Yes
Authentication			
Active Directory Authentication	Checkbox	Disabled	Yes
Access			
Enable Network Intrusion Detection System (NIDS)	Checkbox	Disabled	Yes
Enable Web Access	Checkbox	Enabled	Yes
Restrict to HTTPS **Note:** If Restrict to HTTPS is enabled, the SNMP Listening Port must be set to 443.	Checkbox	Disabled	Yes
Web access port (http) **Note:** You cannot select this setting if the **Restrict to HTTPS** setting is enabled.	16-bit integer	80	Yes
Enable Remote Access: Telnet	Checkbox	Disabled	Yes
Enable Remote Access: SNMP	Checkbox	Disabled	Yes
Lock Port after Failed Logins	Off,2-10	Off	Yes
Port Lock Duration	1,2,3,5,10,20,30 minutes, 1,2,4,8 hours	1 minute	Yes
Reset Port Lock Counter After	Off,[1..24] hours	Off	Yes
Enable Whitelist	Checkbox	Disabled	Yes
Idle Session Timeout	1,2,3,5,10,20,30,45 minutes, 1,2,4,8 hours	10	Yes
Maximum Number of Active Sessions	10-50	25	Yes
Allow Video Display on Web	Checkbox	Disabled	Yes
Encryption			
Require AES Encryption for Calls	Off When Available Required-Video Calls Required-All Calls	Off	Yes
Require FIPS 140 Cryptography	Checkbox	Disabled	Yes

Admin Settings Area	Low		
	Range	Default Value	Configurable?
Local Accounts			
Account Lockout			
Lock Admin Account After Failed Logins	Off,2-10	Off	Yes
Admin Account Lock Duration	1,2,3,5 minutes	1	Yes
Reset Admin Account Lock Counter After	Off,[1..24] hours	Off	Yes
Lock User Account After Failed Logins	Off,2-10	Off	Yes
User Account Lock Duration	1,2,3,5,10,20,30 minutes, 1,2,4,8 hours	1 minute	Yes
Reset User Account Lock Counter After	Off,[1..24] hours	Off	Yes
Login Credentials			
Use Room Password for Remote Access	Checkbox	Enabled	Yes
Require User Login for System Access	Checkbox	Disabled	Yes
Password Requirements			
Admin (Room, Remote), User (Room, Remote)			
Reject Previous Passwords	Off,1-16	Off	Yes
Minimum Password Age in Days	Off,1,5,10,15,20,30	Off	Yes
Maximum Password Age in Days	Off,30,60,90,100,110, 120,130,140,150,160, 170,180	Off	Yes
Minimum Changed Characters	Off,1-4,All	Off	Yes
Password Expiration Warning	Off,1-7	Off	Yes
Remote Access (Admin Remote, User Remote)			
Minimum Length	Off,1-16,32	Off	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes
Require Special Characters	Off,1,2,All	Off	Yes
Maximum Consecutive Repeated Characters	Off,1-4	Off	Yes
Can contain ID or Its Reverse Form	Checkbox	Enabled	Yes
User (Room), Admin (Room)			
Minimum Length	Off,1-16,32	Off	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes
Require Special Characters	Off,1,2,All	Off	Yes

Admin Settings Area	Low		
	Range	Default Value	Configurable?
Maximum Consecutive Repeated Characters	Off,1-4	Off	Yes
Can contain ID or Its Reverse Form	Checkbox	Enabled	Yes
Meeting			
Minimum Length	Off,1-20,32	Off	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes
Require Special Characters	Off,1,2,All	Off	Yes
Reject Previous Passwords	Off,1-16	Off	Yes
Minimum Password Age in Days	Off,1,5,10,15,20,30	Off	Yes
Maximum Consecutive Repeated Characters	Off,1-4	Off	Yes
SNMP **Note:** SNMP passwords are applicable only when the system uses SNMP v3.			
Minimum Length	1-16,32	1	Yes
Require Lowercase	Off,1,2,All	Off	Yes
Require Uppercase	Off,1,2,All	Off	Yes
Require Numbers	Off,1,2,All	Off	Yes
Require Special Characters	Off,1,2,All	Off	Yes
Reject Previous Passwords	Off,1-16	Off	Yes
Minimum Password Age in Days	Off,1,5,10,15,20,30	Off	Yes
Maximum Consecutive Repeated Characters	Off,1-4	Off	Yes
Can contain ID or Its Reverse Form	Checkbox	Disabled	Yes
Security Banner			
Enable Security Banner	Checkbox	Disabled	Yes
Banner Text	DoD Custom	Custom	Yes
Local System Banner Text	Unicode characters, 2048 bytes max	Null (no text)	Yes
Remote System Banner Text	Unicode characters, 2048 bytes max	Null (no text)	Yes
Certificates			
Certificate Options			
Certificate Validation (Web Server)	Checkbox	Disabled	Yes
Certificate Validation (Client Apps)	Checkbox	Disabled	Yes

Admin Settings Area	Low		
	Range	Default Value	Configurable?
Revocation			
Revocation Method	OCSP CRL	OCSP	Yes
Allow Incomplete Revocation Checks	Checkbox	Enabled	Yes
Servers			
Directory Servers			
XMPP	Provisioned-only	Disabled	Yes (via provisioning)
Service Type **Note:** the *Microsoft* selection means Microsoft Lync Server 2010 or 2013, depending on what is installed.	Off Microsoft Polycom GDS LDAP	Off	Yes
SNMP			
Version1	Checkbox	Disabled	Yes
Version2c	Checkbox	Disabled	Yes
Version3	Checkbox	Enabled	Yes
Calendaring Service			
Enable Calendaring Service	Checkbox	Disabled	Yes

D

Call Speeds and Resolutions

Point-to-Point Dialing Speeds

The following table shows the maximum allowable H.323/SIP point-to-point dialing speeds for each system.

System	Maximum Call Speed
RealPresence Group 300	3072 kbps
RealPresence Group 500	6144 kbps
RealPresence Group 700	6144 kbps

Multipoint Dialing Speeds

The following table shows the maximum allowable H.323/SIP dialing speeds for the number of sites in a call. Maximum speeds can be further limited by the communications equipment. Multipoint option keys are required for some of the capabilities shown in the table.

Number of Sites in Call	Max Speed for Each Site	Max Speed for Each Site (ICE Enabled, Lync/OCS R2)	Max Speed for Each Site (CCCP Lync with A/V MCU)
3	3072 kbps	1024 kbps	664 kbps
4	2048 kbps	512 kbps	664 kbps
5	1536 kbps	384 kbps	664 kbps

Number of Sites in Call	Max Speed for Each Site	Max Speed for Each Site (ICE Enabled, Lync/OCS R2)	Max Speed for Each Site (CCCP Lync with A/V MCU)
6	1152 kbps	256 kbps	664 kbps
7 (RealPresence Group 700 only)	1024 kbps	128 kbps	664 kbps
8 (RealPresence Group 700 only)	832 kbps	128 kbps	664 kbps

Call Speeds and Resolutions

The following illustrations show the resolution and frame rate sent in a call, depending on the speed of the call and the **Optimized for** setting of your Camera input. The values for sharpness and motion are the same from 4 MB to 6 MB for systems that support higher call speeds.

The difference between NTSC and PAL cameras is how frame rates are calculated:

- NTSC 60 fps equals PAL 50 fps
- NTSC 30 fps equals PAL 25 fps

The following table shows the resolutions for People video on RealPresence Group systems with NTSC cameras in H.264 High Profile calls.

		Camera Source					
		SD (720x480x60)		HD (1280x720x60)		HD (1920x1080x60)	
Call Speed (kbps)	Motion/ Sharpness	Resolution	Max Frame Rate (fps)	Resolution	Max Frame Rate (fps)	Resolution	Max Frame Rate (fps)
<512	Motion	352x240	60	512x288	60	512x288	60
512-639	Motion	704x480	60	768x448	60	768x448	60
640-831	Motion	704x480	60	1024x576	60	1024x576	60
831-1727	Motion	704x480	60	1280x720	60	1280x720	60
>=1728	Motion	704x480	60	1280x720	60	1920x1080	60
< 128	Sharpness	352x240	30	512x288	30	512x288	30
128-383	Sharpness	704x480	30	768x448	30	768x448	30
384-511	Sharpness	704x480	30	1024x576	30	1024x576	30

		Camera Source					
		SD (720x480x60)		HD (1280x720x60)		HD (1920x1080x60)	
Call Speed (kbps)	Motion/ Sharpness	Resolution	Max Frame Rate (fps)	Resolution	Max Frame Rate (fps)	Resolution	Max Frame Rate (fps)
512-1023	Sharpness	704x480	30	1280x720	30	1280x720	30
1024-2047	Sharpness	704x480	30	1280x720	30	1920x1080	30
>=2048	Sharpness	704x480	30	1280x720	30	1920x1080	60

The following table shows the resolutions for People video on RealPresence Group systems with NTSC cameras in H.264 Baseline Profile calls.

		Camera Source					
		SD (720x480x60)		HD (1280x720x60)		HD (1920x1080x60)	
Call Speed (kbps)	Motion/ Sharpness	Resolution	Max Frame Rate (fps)	Resolution	Max Frame Rate (fps)	Resolution	Max Frame Rate (fps)
<768	Motion	352x240	60	512x288	60	512x288	60
768-959	Motion	704x480	60	768x448	60	768x448	60
960-1231	Motion	704x480	60	1024x576	60	1024x576	60
1232-3071	Motion	704x480	60	1280x720	60	1280x720	60
>=3072	Motion	704x480	60	1280x720	60	1920x1080	60
< 128	Sharpness	352x240	30	512x288	30	512x288	30
128-575	Sharpness	704x480	30	768x448	30	768x448	30
576-831	Sharpness	704x480	30	1024x576	30	1024x576	30
832-1727	Sharpness	704x480	30	1280x720	30	1280x720	30
1728-3455	Sharpness	704x480	30	1280x720	30	1920x1080	30
>=3456	Sharpness	704x480	30	1280x720	30	1920x1080	60

Resolution and Frame Rates for Content Video

The high frame rates with high resolution apply only to point-to-point calls above 832 kbps. In addition, you must set **Optimized for** value of your Camera input to **Sharpness**. Low frame rates apply if your call does not meet these requirements.

For multipoint calls, the maximum resolution and frame rate for content is 720p @ 30 fps.

Resolution	Encode Resolution	Sharpness	Motion
800 x 600	800 x 600	30	60
1024 x 768	1024 x 768	30	60
1280 x 720	1280 x 720	30	60
1280 x 768	1280 x 720	30	60
1280 x 1024	1280 x 1024	30	60
1600 x 1200	1280 x 720	30	60
1680 x 1050	1280 x 720	30	60
1920 x 1080	1920 x 1080	30	60*
1920 x 1200	1920 x 1080	30	60*

*Available only when the **Quality Preference** setting on your RealPresence Group 500 is set to **Content Stream** in **Admin Settings > Network > IP Network > Network Quality**.